

**VILLAGE OF DOWNERS GROVE**  
**Report for the Village Council Meeting**  
**3/7/2017**

<b>SUBJECT:</b>	<b>SUBMITTED BY:</b>
VoIP Telephone System Upgrade	Dave Kenny Director, Information Technology

**SYNOPSIS**

A resolution has been prepared authorizing a contract for upgrading the Village's VoIP telephone system with Sentinel Technologies, Inc. of Downers Grove, Illinois in an amount not to exceed \$113,282.

**STRATEGIC PLAN ALIGNMENT**

The goals for 2015-2017 include *Exceptional Municipal Services*.

**FISCAL IMPACT**

The FY17 Budget includes \$150,000 in the Equipment Replacement Fund (Page 4-13, Line 21) for this contract.

**RECOMMENDATION**

Approval on the March 7, 2017 consent agenda.

**BACKGROUND**

Sentinel Technologies was approved by the Village Council on November 2, 2009 to install the current Cisco Voice over Internet Protocol (VoIP) system. VoIP was primarily installed due to the cost savings it provided over analog Centrex phone lines. The Village has recouped the capital dollars used to implement VoIP.

The Village needs to upgrade its' Cisco VoIP telephone system because the backend server hardware and software are no longer supported. Since the installation of the Cisco VoIP system, Sentinel has been the Village's VoIP vendor and has consistently provided excellent service.

Sentinel has provided a quote and Statement of Work to upgrade the VoIP system and funds have been budgeted in 2017 for this project. Sentinel should be designated as a sole source supplier for the upgrade based on the following:

1. It is an upgrade of our current system; not a new VoIP system.
2. Sentinel has proven expertise and is familiar with the Village's configuration.
3. If another vendor was selected, the Village would still have to pay Sentinel to provide assistance to the other vendor because of Sentinel's familiarity with the Village's configuration.

All equipment and software purchased as part of the upgrade could be moved to a new building if necessary. Only some minor configuration changes made by staff would be needed.

**ATTACHMENTS**

Resolution

Agreement

**RESOLUTION NO. \_\_\_\_****A RESOLUTION AUTHORIZING EXECUTION OF AN  
AGREEMENT BETWEEN THE VILLAGE OF DOWNERS GROVE  
AND SENTINEL TECHNOLOGIES, INC.**

BE IT RESOLVED by the Village Council of the Village of Downers Grove, DuPage County, Illinois, as follows:

1. That the form and substance of a certain Agreement (the "Agreement"), between the Village of Downers Grove (the "Customer") and Sentinel Technologies, Inc. (the "Contractor"), for VoIP telephone system upgrades, as set forth in the form of the Agreement submitted to this meeting with the recommendation of the Village Manager, is hereby approved.

2. That the Village Manager and Village Clerk are hereby respectively authorized and directed for and on behalf of the Village to execute, attest, seal and deliver the Agreement, substantially in the form approved in the foregoing paragraph of this Resolution, together with such changes as the Manager shall deem necessary.

3. That the proper officials, agents and employees of the Village are hereby authorized and directed to take such further action as they may deem necessary or appropriate to perform all obligations and commitments of the Village in accordance with the provisions of the Agreement.

4. That all resolutions or parts of resolutions in conflict with the provisions of this Resolution are hereby repealed.

5. That this Resolution shall be in full force and effect from and after its passage as provided by law.

\_\_\_\_\_  
Mayor

Passed:

Attest: \_\_\_\_\_

Village Clerk



## **APPENDIX A**

Customer Name: Village of Downers Grove

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Street Address: 801 Burlington Avenue

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City, State, Zip: Downers Grove, IL 60515

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The Agreement referenced below by and between Sentinel Technologies, Inc., (Contractor) with principal offices at 2550 Warrenville Road, Downers Grove, Illinois 60515, and Village of Downers Grove (Customer) with principal offices at 801 Burlington Avenue, Downers Grove, IL 60515 is hereby amended to include the following:

Commencement Date

Agreement No. MSA-001

Addendum No. 035r3-TR

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### **Executive Summary**

Village of Downers Grove (VDG) is looking to upgrade their current Cisco Unified Communications applications and hardware. Along with the upgrade, VDG will be implementing Cisco Instant Messaging and Presence with Expressway to enable Cisco Mobile Remote Access (MRA). They currently have CallManager version 7.1.3.30000-1 and Unity version 8.5.1ES47.12900-47 running on Cisco MCS servers. They are utilizing ESNA CloudLink to enable single inbox with Google Mail. Also, the embedded version 7 attendant console is in use.

The project entails the following services:

- Upgrade of the existing UC applications to version 11.5
- Migration of applications from Cisco MCS servers to (2) Cisco Business Edition 6000H servers
- Addition of a new subscriber node for CallManager (Publisher, Subscriber & Subscriber)
- Upgrade of ESNA CloudLink Application for Single Inbox
- Replacement of (2) voice gateways with Cisco ISR 4321 router
- Removal of (5) voice gateways and migration of analog services to VG204 gateways
- IOS upgrade as required of existing VG224 analog voice gateway at Police Department
- Removal of SRST at all locations
- Implementation of High Available Instant Messaging and Presence Servers
- Implementation of High Available Expressway for Mobile Remote Access
- Implementation of Cisco Attendant Console Standard

**Note:** The Village of Downers Grove will be implementing just call control and presence features. Due to freedom of information (FOIA) requests, the village requests that IM features be disabled.

It is the intent of this engagement that Sentinel will architect, design, and implement the project according to Sentinel established best practices and in a manner ready for production computing. During this project, knowledge transfer of general administration tasks, points of scale, and the environment will be provided to prepare the customer staff moving forward after the engagement.

The next section "Project Overview" highlights the main phases involved in this project. The "Scope of Work" section then lays out in further detail what is covered as part of this project. Finally, "Customer Responsibilities and Assumptions" details important assumptions Sentinel has made in discussion with Village of Downers Grove's Team.



## **Project Overview**

### **Project Phases**

#### **Phase 1 - Project Initiation Meeting**

Sentinel Project Management will coordinate a kick-off meeting to review and approve the Scope of Work provided to the Customer. Customer and Sentinel provided resources will be introduced and their relevant roles for the project discussed. Sentinel Project Management will then coordinate a time for a site visit by Sentinel Engineers in order to draft a blueprint of all proposed work which will be provided to the Customer. High level timelines for project milestones will also be identified and discussed.

#### **Phase 2 - Analysis & Design**

Sentinel engineers will perform a high-level audit of the Customer's relevant infrastructure. The data collected from this audit will be used to generate a design for the implementation of the solution. Sentinel engineers will inform the Customer of any design requirements that will need to be completed by the Customer's IT staff prior to the start of the next phase (such as provisioning of storage space, acquisitions of licenses, and other essential design components not covered within this document). Upon acceptance of the work as detailed within the blueprint by the Customer, Sentinel engineers and project managers will then coordinate specific dates and times appropriate for accommodating the nature of the work involved (i.e. work which will require outages will be scheduled during appropriate maintenance windows).

#### **Phase 3 - Staging**

During the staging phase, equipment will be unboxed, burned-in, configured and tested off-site before being repacked and delivered for onsite implementation. This ensures maximum efficiency and quality while minimizing the disruptions and impacts to the Customer's environment.

#### **Phase 4 - Implementation**

Sentinel engineers will proceed with the implementation of all items specified within this Scope of Work and further detailed in the Customer approved Design Document.

##### **Phase 4.1 - Cisco Collaboration Upgrade**

Sentinel engineers will upgrade the Cisco Collaboration environment which is comprised of the following application components:

- Call Manager (CUCM)
- Unity Connection

##### **Phase 4.2 - Cisco Mobile Remote Access**

- Sentinel will install the required components to implement a high available environment for MRA. These components include:
  - Cisco Instance Message and Presence for support of Mobile Remote Access for Jabber Calling and presence data.
  - Cisco Expressway Core and Edge

#### **Phase 5 - Migrations/Cutover**

After implementations are complete, Sentinel engineers will proceed with all migrations and cutovers. Sentinel engineers will work with Sentinel's project managers to coordinate any needed maintenance windows for the completion of the project.

#### **Phase 6 - Post Support**

Sentinel engineers will be dedicated to being available for the resolution of any problems or issues that arise during the post support portion of the project.

#### **Phase 7 - Project Completion**

Upon conclusion of all other phases of work Sentinel's engineers will provide the Customer with updated design documents for the project. Sentinel's project management team will then arrange for a meeting with the Customer to review the status of all project items. If no project items remain open Sentinel's project managers will request that the Customer sign off on the project, thus closing the project at that time. Scope of Work





## **Planning and Pre-Engagement Preparation**

- Identification of key Customer project team members with whom Sentinel will work to accomplish the tasks defined in this Scope.
- Review required hardware, software, networking and facilities required to successfully complete this engagement.

## **Analysis & Design**

### **General**

- Analyze the current environment to make sure the environment is ready for infrastructure implementation based upon the assumptions laid out in the next section.
- Engage with the Customer team to brainstorm the technical requirements and use case design for the implementation.
- Develop specific requirements, design and use case specifications blueprint document based upon Customer discussion.

## **Implementation – Cisco Collaboration - Upgrades**

### **Applications - CUCM**

- Village of Downers Grove has engaged Sentinel to upgrade their current CUCM environment from version 7.x to 11.x. This upgrade will be a Physical Server upgrade utilizing a new Cisco UCS C-Series Server. The current CUCM environment has 528 licensed users. Village of Downers Grove is not adding any additional licenses as part of this project. If Village of Downers Grove requires additional licensing, the project manager will work with the project team and the customer throughout the PCR process.
  - As explained in the presales meetings, Cisco has a DLU to UCL/UWL licensing conversion process. Cisco uses a DLU calculator to complete this conversion <https://software.cisco.com/download/navigator.html>
- Sentinel will install and configure the Cisco UCS C-Series server and associated VMware ESXi hosts.

### **Applications - Unity**

- As part of the project, Village of Downers Grove has elected to upgrade Unity. The current Unity version is 8.x and will be upgraded to 11.x. As part of this upgrade, the Sentinel engineer will request information about current mailbox sizes and corporate retention policies. Sentinel will use the Cobra tool to migrate current mailbox files over to the upgraded server. This is typically done a few days prior to the upgrade.
- Unified Messaging (Single Inbox) will also be configured.

### **Applications - CER**

- Village of Downers Grove has indicated that they do not utilize Cisco Emergency Responder today, but instead send calls out PSTN with the Billing Telephone Number Tagged for address information.
- A link for all states 911 laws has been provided below:
  - <http://www.911enable.com/resource-center/state-e911-legislation>

### **Applications – 3<sup>rd</sup> Party**

- Village of Downers Grove uses several third party applications within their Cisco Collaboration Infrastructure. The Village has identified that it uses ESNA CloudLink for single inbox for Google Mail. ESNA will be performing the upgrade of CloudLink coordinated by Sentinel.
  - Sentinel assumes the responsibility for validating compatibility of these applications will be a shared responsibility between Village of Downers Grove and the Sentinel team. Any required changes to the third party applications will be the responsibility of Village of Downers Grove or an associated vendor.
  - Sentinel will be responsible for supporting the Cisco portions of the 3<sup>rd</sup> Party integrations until the test and acceptance of those integrations are complete. Sentinel will be involved with the customer's team during the planning process.



- Village of Downers Grove acknowledges that they and/or an associated vendor are the Subject Matter Experts (SME's) for these 3<sup>rd</sup> party applications and are therefore the most appropriate primary owner responsible for verifying 3<sup>rd</sup> party applications are compatible with the new version of CUCM.
- Village of Downers Grove will provide all needed compute resources and required operating systems to enable the upgrade.

#### **Hardware – Voice Gateway**

- Village of Downers Grove currently has 7 voice gateways in production today. Five of these will be retired with analog lines migrated to VG204 gateways.
- Village of Downers Grove will be adding 2 additional new voice gateways to their production environment. The current protocol to CallManager is MGCP. Village of Downers Grove will migrate from MGCP to SIP during this project.
- Village of Downers Grove currently has 1 VG224 analog voice gateway that will require an IOS upgrade.

#### **Hardware – ATA Adapters**

- During the presales process, it has been determined the ATA186 adapter is not compatible with the new CUCM version. Therefore, Sentinel has included 2 new ATA adapter(s) in the project BOM along with the professional services to configure the new ATA adapter(s).

#### **Upgrade Approach**

- As part of this scope, Village of Downers Grove has decided to move forward with upgrading the entire environment at one time. With the “one cut” approach, Village of Downers Grove’s voice environment will be offline during a scheduled maintenance window. Once the upgrade is complete, the next day Village of Downers Grove’s environment will be on the new upgraded platform. Onsite post support will be included in the professional services to handle any issues that may come up following the upgrade.

#### **CallManager - Subscriber Add**

- Sentinel will add a second Subscriber to the existing cluster after upgrading to version 11.5
- Sentinel will reconfigure the CallManager cluster with respect to:
  - Balancing services (enabled processes) across cluster nodes based on Cisco best practices (CallManager, TFTP, etc.)
  - Configure CallManager to support appropriate load balancing and failover (CallManager Groups, Device Pools, etc.)

#### **Voice Gateways**

- Sentinel will upgrade the voice gateways at Village Hall and Public Works by replacing existing gateways with new Cisco 4321 Routers and upgrading the IOS of the VG224 analog voice gateway.
- Sentinel will remove existing voice routers at five (5) other sites and migrate analog lines to VG204 analog gateways
- Sentinel will remove SRST configurations from enterprise

#### **Instant Messaging and Presence (IM&P)**

- Install a (2) node High Availability Instant Messaging and Presence cluster (IM&P)
- Integrate IM&P with Call Manager and create the needed UC profiles
- Develop a five person pilot for Jabber to include desktop and mobile application for Apple and Android. Sentinel will provide training to the select 5 people.
- Globally disable Instant Messaging functionality





### **Expressway High Available Core and Edge**

- Implement a High Available Expressway consisting of (2) core and (2) edge servers.
- Configure Expressway for Cisco Mobile Remote Access
- Sentinel assumes that The Village of Downers Grove will provide DMZ facilities at the two data center locations. The Village will need to provide a DMZ zone where the Expressway Edge server will be installed. The expressway edge server is a VM that will need to have an interface in the DMZ zone at both data center locations.
- The Village of Downers Grove will be responsible for all DNS and firewall changes. Sentinel will provide the need configuration changes required to support Mobile Remote Access. The village of Downers Grove will be responsible for execution of these changes

### **Attendant Console Standard**

- Sentinel install and configure Attendant Console Standard.
- Sentinel will provide training for one user.

### **ESNA CloudLink**

- Upgrade of ESNA CloudLink will be provided by the vendor
- The Village is responsible for providing appropriate hardware and Operating System for CloudLink server. Cloudlink can reside on the new server hardware or on existing server hardware.
- Sentinel will assist ESNA and VDG with Unity related configurations

### **Documentation and Knowledge Transfer**

- Provide documentation of the setup including a revised Sentinel design doc as well as any available vendor-created administrative and/or best practices guides.
- Provide knowledge transfer including basic functional overviews of products implemented, demonstrating the normal operations as installed in the customer's environment.
  - Note that knowledge transfer and functional overviews are not a substitute for formal vendor product Customer Education courses available. Sentinel strongly encourages attendance at Customer Education classes to gain further insight into the product architecture and its integration.

### **Project Management**

Sentinel will provide a project manager committed to the success of the project. The project manager will be responsible for:

- Complete success of the project
- Optimal coordination of all resources
- Guiding the client on aspects of the project they are required to perform
- Tracking and reporting of progress
- Management of agreed to budget issues
- Management of expected timelines for implementation
- Changes to the project and communications of changes in writing using a Project Change Form
- Post installation document gathering, assembly and presentation
- Post installation project completion agreement and signature

Project management will ensure complete project success. Communication is the cornerstone of project management and the project manager will be the central communication mechanism for all parties. This will assure all relevant parties are informed about decisions that may affect the success of their component of the solution.





## **Customer Responsibilities and Assumptions**

The following is a list of responsibilities and/or tasks that Sentinel assumes have been completed or reviewed by Village of Downers Grove prior to the execution of the above-mentioned project. If additional responsibilities are uncovered during the project, Sentinel will make sure that Village of Downers Grove is made aware of any issues promptly to determine resolution.

### **General Proposal Assumptions**

#### **Product Lead Times**

Depending on the technologies quoted, orders may be direct or through distribution. Lead times should be expected to be 8 weeks but can exceed 8 weeks. Should expedited equipment requirements arise, there could be an additional charge to source through a warehousing distribution partner.

#### **Site Readiness and Site Survey Requirement**

Every effort has been made to ensure that proper power cords and patch cables have been included to match your environment's infrastructure. The notes section of the Bill of Materials (BOM) explicitly states the quantity and type of cords quoted.

**Three options are available to ensure the accuracy of the selected items; please initial next to which method you agree to: (SELECT AND INITIAL ONLY ONE)**

**Initials**

#### **Option 1**

Customer waives the opportunity to complete a site/closet checklist, has reviewed the BOM and agrees to quantity, type and length of the power and patch cables provided. [Financial obligation for labor and materials for changes identified post order will be the Customer's responsibility]

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#### **Option 2**

Customer has provided a site/closet review checklist document and confirms the quantity, type and length of the power and patch cables quoted. [Financial obligation for labor and materials for changes identified post order will be the Customer's responsibility, unless Sentinel provided the incorrect part based upon the provided checklist]

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#### **Option 3**

Customer elects a "for charge" onsite survey of the facilities and closets to determine the quantity, type and length of the power and patch cables required. In addition, Sentinel will assess each closet's cooling and UPS readiness for the proposed equipment being provided. [Financial obligation for labor and materials for changes identified post order will be Sentinel's full responsibility, unless changes to the site have taken place subsequent to the site assessment]

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#### **Fiber**

It is assumed that the Customer's existing fiber will support proposed transmission speeds (i.e. 1GB, 10GB, 40GB, etc.). Customer must ensure that the fiber optic cabling is within manufacturer tolerances for distance and loss in order to support the required transport speeds. In some cases, specialized equipment, such as attenuators and mode conditioning cables, may be required to properly support these speeds. This equipment will be at the expense of the Customer.

#### **Optics (SFP, SFP+, GBIC, etc...)**

Every effort was made in the pre-sales process through white board sessions, BOM reviews and diagrams to identify any and all optics required. **OPTICS AS QUOTED AND SOLD ASSUME A STAND ALONE SYSTEM UNLESS OTHERWISE NOTED.** Migration items and integration items to existing equipment, if not noted, are not included nor is time for the interconnection, planning or design of same. Should any question exist as to the total number, types and use of the optics, Sentinel can set up a design review and white board session prior to the order upon request.

**Power, Racks and Cooling**

Like the optics, Sentinel has made a best effort to match any power requirements and answer any requests of the Customer related to equipment specifications, power cables included or other physical requirements. Any adjustments to fit in racks, connect to specific power terminal types, or secure electrician services to run a new service are beyond the fixed bid project price. Sentinel will respond to any inquiry and provide product literature. Any sizing charts provided are done so as a convenience to the Customer and DO NOT represent a commitment by Sentinel that, as sold, the equipment is ready for the Customer site. Sentinel offers Technology Area Design (TAD) consulting services should the Customer prefer a more formal and accurate solution.

**Patch Cables/Cable Lengths**

In most cases the BOM includes any note(s) on cable lengths included. Without the design validation of a formal TAD engagement, only a best effort is made to match the site requirements. Any changes to the cord lengths, connectors or other site readiness items will be in addition to the solution once the order is placed with the manufacturer(s). Many of the vendors offer the ability to select the appropriate items prior to order, but will charge for any replacements needed after the order and this offer will be extended to the Customer through the Sentinel Project Change Request (PCR) process. Unless specified, Sentinel assumes the Customer will provide all patch cables needed and can provide the product literature on any devices upon request.

**Labor Union Requirements**

Sentinel has NOT included any parameters for Union workers. Any requirement would require a subcontract arrangement to be determined up front and would increase the cost of deployment.

**Permits & Access**

Unless otherwise agreed, all permits, variances, access to facilities, roof access, building warranty concerns or other site specific information and procedures are the responsibility of the Customer. Sentinel can assist as needed, but will need to be informed of any requirements prior to the site survey to consider these within the validation process.

**Patching of Equipment Cabling**

Sentinel assumes, unless noted here, that the Customer will patch in all equipment to the cabling plant within the facility. Sentinel can perform this connection service at an additional charge with an approved PCR.

**Remote Support**

Sentinel's service estimate assumes remote access support through IP VPN or IP PPP connection. Without this access, additional services may be incurred for optimization and tuning required pre and post installation.

**Travel Requirements and Cost**

Unless specified within the proposal, all travel expenses and time outside the Chicagoland area are not included. Travel time shall be invoiced at pre-negotiated rates and expenses plus per diem at actual costs.

**Unified Communications****VoIP Site Power**

Power backup provisions are recommended. Unless noted here or within the equipment detail, Sentinel has not provided power backup analog lines, phones or cabling. There are many ways to provide this service including automatic power failure relay equipment, and Sentinel can provide a recommendation and cost estimate upon request.

**Language Support**

Unless noted within the proposal detail, the solution assumes US English language only. Additional language support needs to be identified and quoted at an additional cost.

**Message Support**

Prompts, messages and music on hold. Unless noted, this proposal assumes Customer provided prompts and messages. Sentinel can recommend a professional service for this as required.



**Quality of Service**

This proposal does not specifically include QoS provisioning unless otherwise specified in the above deliverables. Basic QoS will be configured on all endpoints and/or devices per best practices. For services that will leverage a broadband/Internet based connection, Sentinel will not be able to guarantee quality and/or performance on these connections as they are considered "best-effort".

**Active Directory**

Customer may be required to make adjustments or additions to the existing LDAP/Active Directory environment for UC application integration. This would be in adherence with best practices in most cases. Customer is responsible for these changes if needed.

**Upgrades**

The upgrade process may involve the updating of production systems that can make the applications unavailable, as well as some network resources. The work that requires system or network resources to be unavailable to the end users will be performed during non-business hours. Customer must schedule the upgrade at a time where the systems will be available for upgraded processes with no interruption from network activities.

Although the Customer UC platforms have been checked against the Cisco hardware compatibility list to ensure compatibility with the required upgrades; Sentinel has encountered cases where the platform has failed hardware checks during installation/upgrade when applicable. Sentinel makes all efforts to ensure platforms are compatible but cannot guarantee all platforms will validate hardware checks until the upgrade process is started. In cases where hardware is not compatible, Sentinel will offer possible alternative options where applicable.

Sentinel assumes that there are active ESW and UCSS or (SAU Equivalent) or SWSS contracts in place to allow "no cost" software upgrade licensing and media for the proposed upgrades

**Client Software**

Sentinel will install the applicable Cisco client software (i.e. CAD, Jabber, CUCI, CUVA, etc.) on up to three (3) Customer provided workstations. The Customer is responsible for the deployment of any Cisco client software to the remaining workstations in the environment.

**WAN Multicast**

Support for multicast over the WAN may not be supported depending on the WAN technology being leveraged. MPLS WAN technology typically does not support multicast unless specifically allowed by the provider. In these cases Sentinel may recommend unicast or tunneling alternatives to help facilitate. These recommendations may require additional services that are not included in this proposal.

**Live Music on Hold**

Live music on hold is not currently supported for the virtualized installation of Cisco Unified Communications. Sentinel recommends leveraging a lesser model physical server for live MoH if required. If this option is not feasible, Sentinel can suggest possible solutions to work with live MoH. These solutions are not included as part of this proposal.

**Spec-Based UC**

When installing Cisco UC on non-Cisco hardware or hardware that does not specifically match Cisco trusted reference configurations (TRC), the Customer is responsible for ensuring that the hardware platform(s) meet the requirements as outlined by Cisco for UC. This includes but is not limited to CPU, Memory, Disk IOPs, etc.

**E911 and Cisco Emergency Responder**

Sentinel assumes that a Locator ID/Locator ID Lite or equivalent E911 service will be provided by the Customer. This service works with the Cisco Emergency Responder solution. Should the Customer require E911 services and the solution does not include the Cisco Emergency Responder solution, the system will support ANI information on an extension by extension basis. This means that services such as MACs would require a manual entry change in the carrier's database and also would eliminate compliance if using Extension Mobility. For truly zero cost MACs and compliance when using Extension Mobility, Sentinel highly recommends Cisco's Emergency Responder solution.



Sentinel assumes that at a minimum, each chassis switch will be its own Emergency Responder zone. Any additional breakdown of zones outside of these criteria will be handled through the PCR process.

The Cisco Emergency Responder solution requires database registration support. Sentinel assumes the Customer will be responsible for obtaining registration services for the phone number corresponding to the Emergency Responder server.

### **Emergency Services for Voice**

Sentinel implements 911 services on all voice solutions. Depending on local, state or federal regulation, enhanced 911 services may be required. Sentinel's standard installation allows 911 calling from "9911", "x911" where x is the digit agreed to for PBX outside line requests and for "911" being dialed. This assures 911 calls are processed by the most common methods used in telecom solutions and does not block any potential emergency calls. Please refer to the detailed solution listing for 911 specific information and E911 specific equipment. Sentinel must be made aware of specific E911 requirements and recommends Village of Downers Grove seek professional counsel for E911 compliance recommendations for design.

### **E911 Emergency Responder**

Will require service from carrier for mapping zones to location information. Services offered similar to SBC LocatorID Lite are adequate. Recurring cost services such as full LocatorID are not specifically required.

### **DID Requirement**

Sentinel recommends no less than 3 dedicated DID numbers per zone. The number of zones is to be determined in the planning and design post sales. These will be programmed into the data network switches for E911 services.

### **Switches**

A Cisco network infrastructure is required. Most new Cisco switches will work with Emergency Responder. Any existing switches will be confirmed by the installation engineer and may require upgrades or replacement.

### **Carrier Service**

Along with the carrier E911 service there will be a requirement for a PRI line or CAMA trunk. Sentinel's default design assumes PRI circuits unless CAMA trunks are specifically called out within the design.

### **E911 Notification**

Emergency Responder includes automated notification. This will be planned within the deployment and Sentinel will require the information of the notified parties.

### **Licensing**

Emergency Responder does require a license per end E911 compliant device. This includes IP attached end points AND analog FXS attached end points.

### **Redundancy**

In the absence of the Emergency Responder service the system will only adhere to standard 911 services. Redundant Emergency Responder servers are possible, please refer to the detailed bill of materials for the specific Emergency Responder design.

### **Change Control**

Once E911 information is programmed into the data network the Customer is required to maintain good change control. Because switches may be segmented into zones, there can be no patch cable moving of ports without an update to the programmed E911 information into the data network. Any replacement switches will also need to be re-programmed with the E911 information if the model of switch is changed and the original configuration is not able to be re-used.

### **Compliance**

Sentinel's service includes enabling E911 to the planned design. In no way does Sentinel take any responsibility for, or guarantee, compliance. Compliance requirements and programming are recommended but are to be validated and agreed to by the Customer, Customer's legal counsel and local emergency services organization. Sentinel recommends the Customer engage the local emergency services for compliance testing and perform ongoing compliance testing to assure E911 services are operating properly after installation and through the lifetime of the system.





### **Site Requirements**

Working with the Customer, Sentinel has made every effort to determine the E911 needs nationally and internationally. However, since Sentinel is not the Customer's legal counsel, the responsibility for identification of E911 required sites and international emergency service requirement remains with the Customer. Sentinel will work with the Customer, as required, to determine any possible requirements and make a recommendation for compliance with the solution. The final emergency services plan will be agreed to by the Customer, installed by Sentinel and tested prior to final project sign off.

### **Unified Contact Center**

Sentinel has provided "baseline discovery & design" in this response as well as applicable hours to develop and script the contact center per the Customer requirements. This scripting will follow base "standard" scripting practices and any "special" or customized development that will require significant development will not be included. Sentinel will work with the Customer to avoid this situation where possible.

### **Statement of Work - Sentinel High Availability Network Support (HANS™) r12091615**

#### **1. Inspection and Repair**

Prior to the Commencement Date of Maintenance under this Appendix, the equipment covered hereunder and delineated in Appendix B ("the Equipment"), shall be subject to inspection by the Contractor at no charge to the Customer, to determine if it is in acceptable condition for maintenance. Any repairs, adjustments or replacement of missing items deemed necessary by the Contractor to bring the Equipment up to an acceptable condition shall be the responsibility of the Customer. The Contractor reserves the right to modify, repudiate or terminate this Appendix if, in Contractor's opinion, the Equipment is not capable of maintenance or if Customer refuses or fails to bring the Equipment up to an acceptable condition.

#### **2. Responsibilities of Contractor**

The Contractor shall, for the total charges set forth in Appendix B, maintain the Equipment in good operating condition and furnish maintenance service during the Contracted Periods of Maintenance Service selected by the Customer as designated on Appendix B.

The Maintenance Service includes:

- a. Unscheduled Remedial Maintenance Service during the Contracted Periods of Maintenance Service when notified by the Customer that the Equipment is inoperative.
- b. All costs of labor and field installable parts deemed necessary by Contractor to be required for maintaining the Equipment as a result of normal wear and tear. At Customer's request, Contractor will, for additional time and material cost, make required repairs not attributable to normal wear and tear.
- c. The installation of new parts or parts equivalent to new in performance. Replaced parts shall become the property of Contractor. Contractor shall be responsible for the replacement of only those parts unusable as a result of normal usage and wear and tear.
- d. With regard to end of life products, Contractor shall use its commercially reasonable best efforts to support said products until such time it is determined, in Contractor's sole discretion, that the support of these products is not economically viable. At the time that determination is made, Contractor shall notify Customer, in writing, and Contractor shall then be relieved of any and all obligation or liability relating to said products.

#### **3. Responsibility of the Customer**

- a. The Customer shall notify Contractor's maintenance personnel upon Equipment failure and shall allow Contractor full and free access to the Equipment, subject to the Customer's commercially reasonable internal security rules.
- b. The Customer shall not permit maintenance or repairs to the Equipment to be made or attempted, except as specified and approved in advance by Contractor.
- c. The Customer shall maintain the site environmental conditions throughout the Contracted Periods of Maintenance Service in accordance with the specifications established by the Equipment manufacturer.





- d. Prior to the Commencement Date of Maintenance under this Appendix, the Customer shall provide Contractor with an accurate inventory of the Equipment to be covered hereunder. Should Customer's inventory be incomplete or otherwise inaccurate, Customer acknowledges that Contractor shall be absolved of any liability relating to the equipment not listed or misidentified, unless the parties agree to an additional charge for provision of service to that equipment. For multi-year contracts, this inventory shall be updated by Customer annually. At Customer's request and for an additional charge, Contractor can perform an inventory of Customer's Equipment to be covered hereunder. If the Customer requests that modifications be made to the inventory during the Contracted Periods of Maintenance Service, then maintenance service will be supplied unless such modifications make it impractical for Contractor to render maintenance service, in which case Contractor shall be relieved of its responsibilities. If the requested modifications increase maintenance costs, Contractor shall have the right to adjust accordingly the maintenance charges specified on Appendix B.
- e. In order to activate Contractor's restoration guarantees, Customer agrees to present Contractor with up to date configurations of the covered devices at time of failure. However, if the Customer has a monitoring/managed services agreement in place, Sentinel can provide the configs via monitoring/managed services. Contractor's restoration guarantees will not be in full force or effect until Customer provides engineer active configuration at time of failure. In the event Customer does not provide the configuration information, any incremental effort required during the restoration process that is attributable to missing configuration information may result in additional charges.
- f. It is the Customer's responsibility to maintain and supply Contractor with current server backups as requested to facilitate system restoration. Contractor is only responsible to restore data based on the latest known good backup that Customer has supplied. In the event Customer does not provide a conforming backup, any incremental effort required by Contractor as a result of the non-conforming backup may result in additional charges.
- g. Customer shall inform Contractor of any end of life, replacement or phase out notifications it receives from Equipment manufacturers, dealers or agents.

#### **4. Call Recording**

The recording and/or monitoring of incoming and outgoing telephone calls between Contractor and Customer will be undertaken by Contractor for the purpose of providing constructive performance feedback, pursuing complaints, taking corrective action, measuring satisfaction or for any other purpose Contractor deems relevant to improving customer service. Customer, on behalf of itself and its employees, agents and assigns, consents and authorizes Contractor to implement this procedure.

#### **5. Periods of Maintenance Service Availability**

- a. The Annual Maintenance Fee and the Contracted Periods of Maintenance Service available to the Customer are stated in Appendix B. Notwithstanding the terms therein, the activation of the obligations under this Appendix commence no later than the date Contractor purchases any contracts or equipment on Customer's behalf.
- b. If the Customer removes individual Equipment from the system configuration, said individual Equipment may be added or deleted from maintenance coverage under this Appendix by giving Contractor thirty (30) days advance written notice. SMARTnet contracts purchased on the Customer's behalf are non-refundable. Contractor agrees to provide information to assist Customer in requesting a refund for prepaid SMARTnet contracts.

#### **6. Excluded Services**

The following services are outside the scope of this Appendix, but can be provided at an additional charge:

- a. Maintenance or repairs attributable to unauthorized attempts by or for the Customer to repair or maintain the Equipment; Equipment being used for purposes other than that for which it was designed; maintenance or repairs necessitated by Acts of God, war, government regulation, terrorism, disaster, strikes, civil disorder, accident, transportation, or similar emergency beyond the parties' control; failure to provide suitable environmental conditions; fault or negligence of the Customer, its agents, employees or assigns; improper use or misuse of the Equipment; and causes external to the Equipment, such as, but not limited to, power failure, air conditioning failure, and electrostatic conditions.
- b. Furnishing supplies or accessories, or refurbishing of Equipment.



- c. Installation, moves, adds, or changes to Equipment/software.
- d. Maintenance or repairs attributable to manufacturer defects, bugs, viruses, or other similar defects.

## 7. Service Level Agreement (“SLA”) for Sentinel HANS™

SLAs are noted below, in accordance with the following general Severity Level definitions and the provisions of Section 8 below:

- a. **Severity 1:** Interruption making a critical functionality inaccessible or a complete network interruption causing a severe impact on services availability. There is no possible alternative.
- b. **Severity 2:** Critical functionality or network access interrupted, degraded or unusable, having a severe impact on services availability. No acceptable alternative is possible.
- c. **Severity 3:** Non critical function or procedure, unusable or hard to use having an operational impact, but with no direct impact on services availability. A workaround is available.

Note: Due to the time required for set up to support HANS™ agreements, adherence to SLAs will become effective no sooner than 30 days after Customer signature.

### Incident Service Level

Severity	Notification SLA	SLA Commitment	Response SLA	SLA Commitment	MTTR (Mean Time to Repair)	SLA Commitment
Severity 1	15 Minutes	99.5%	1 Hour	99.5%	Dependent on SLA purchased, See Appendix B	99.5%
Severity 2	15 Minutes	99.5%	2 Hours	99.5%	Dependent on SLA purchased, See Appendix B	99.5%
Severity 3	4 Hours	99.5%	NBD	99.5%	Two Business Days	99.5%

## 8. SLA Options

There are three SLA options for Sentinel HANS™. The definitions below describe the components of each SLA offering. The SLA of each device under contract is detailed on Appendix B.

HANS™ Silver – provides all the services detailed under Item 8a. below. This service does not allow the Customer the ability to call the Manufacturer TAC directly for support or receive software updates to a device.

HANS™ Gold – provides all the services detailed under Item 8a. and 8b. below. Contractor is authorized to deliver Manufacturer Support and as such, Contractor has the ability to escalate to Manufacturer TAC for incidents, as well as receive all software updates for devices. Contractor is ultimately responsible for supplying parts to support Manufacturer hardware.

HANS™ Platinum - provides all the services detailed under Item 8a. below with all Equipment backed by a Manufacturer support agreement which provides Customer and Contractor access to Manufacturer's support resources, and the ability to update software. Contractor is ultimately responsible for supplying parts to support Manufacturer hardware.

- a. The following details the level of support provided under all HANS™ service agreements:
  - All calls for service are to be placed with, monitored and escalated by Contractor.
  - Contractor will reload/configure system components with Customer-supplied back up as required to ensure complete functionality and restoration.
  - For service calls that are started within the Contracted Period of Maintenance Services, Contractor will, when necessary, provide continuous effort to extend service beyond the contracted hours of coverage.
  - Contractor will provide maintenance management services and, if requested by Customer, will act as the Customer's agent in attempting to resolve issues with other vendors/suppliers.





- Contractor will utilize remote diagnosis and remote repair capability to expedite problem resolution.
  - Contractor will supply loaner equipment on a best efforts basis in emergency situations for non-core network equipment.
  - Contractor will provide primary and secondary engineers to gain knowledge of the configurations, along with an assigned escalation manager.
  - Contractor will provide advanced replacement of hardware in accordance with the SLA defined per device in Appendix B.
- b. The following details the additional level of support provided under all HANS™ Silver service agreements:
- Cisco Specific Items
    - Contractor will provide the software for the Smart Collector upon Customer's request. The Smart Collector will only provide the functionality outlined below and without the Smart Collector, these functions will not be possible. Specification of the hardware requirements will be given to Customer during the kick-off phase, the Customer will be responsible for provisioning the OVA provided by Sentinel. Customer is also responsible for providing Contractor with SNMP Read-Only community strings for each device and Customer will be responsible for re-configuring the community string if it is not configured correctly on the devices.
    - Alert reporting – alerts to bug fixes, service alerts, EOX alerts
    - Device Diagnostics alerting and providing access to hundreds of symptom/fix data points. Customer is responsible for configuring and registering each device in order to activate this service. A sample configuration can be provided at time of installation.
  - NetApp/EMC Specific Items
    - Sentinel will setup the Manufacturer Phone Home capability to notify both the Manufacturer and Sentinel at the time of failure so that a ticket will automatically be generated in the Sentinel system for immediate response.
  - General Items
    - Contractor provides TAC support and escalation of cases to Manufacturer TAC on behalf of the Customer. In addition, in certain circumstances Customer may participate in Contractor's call with Manufacturer TAC.
    - Contractor will provide Contract and Inventory Management on the Customer infrastructure.

With regard to any software licenses provided pursuant to the provision of services under this Agreement, the Customer is hereby prohibited from duplicating said software in any form or fashion and is further restricted from using the software beyond the intended scope set forth herein. Moreover, Customer is restricted from licensing, sublicensing or transferring said software to any third party (except to a related party) without the express permission of Contractor, under which circumstance the software shall stay under the control and auspices of the Contractor. In the event Customer loses or damages the software, a copy may be provided at a nominal charge. At the end of this engagement or the license period, whichever occurs first, Customer is required to either destroy or return all copies of the software to Contractor, as expressly directed by Contractor.

CUSTOMER:  
Village of Downers Grove

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

CONTRACTOR:  
Sentinel Technologies, Inc.

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_





## APPENDIX B

Customer Name: Village of Downers Grove

Street Address: 801 Burlington Avenue

City, State, Zip: Downers Grove, IL 60515

The Agreement referenced below by and between Sentinel Technologies, Inc., (Contractor) with principal offices at 2550 Warrenville Road, Downers Grove, Illinois 60515, and Village of Downers Grove (Customer) with principal offices at 801 Burlington Avenue, Downers Grove, IL 60515 is hereby amended to include the following:

Commencement Date

Agreement No. MSA-001

Addendum No. 035r3-TR

### PROJECT SCHEDULE

Customer agrees to pay Contractor for services in accordance with the following schedule:

### UC Upgrade

#### Hardware and Software

		Extended Price
Cisco Business Edition 6000M Server - QTY 2	\$	24,196.00
Cisco UC License Upgrades	\$	13,954.00
Cisco 4321 Voice Router with PRI Interface - QTY 2	\$	8,824.00
Cisco ATA 190 Analog Adapters - QTY 2	\$	342.00
Cisco Unified Attendant Console Standard 11.x - 1 Lic	\$	566.00
Cisco VG204 Analog Voice Gateway - QTY 7	\$	5,754.00
ESNA Cloudlink upgrade for Google Mail	\$	1,800.00
ESNA Cloudlink 1 YR Transcription Subscription for Google Mail - QTY 300	\$	4,200.00
<b>Hardware and Software Total</b>	<b>\$</b>	<b>59,636.00</b>

#### Solution Maintenance & Support

		Extended Price
<b>HANS™ 12 Month Maintenance</b>		
HANS™ Gold Hardware Maintenance	\$	1,914.00
HANS™ Gold Software Support & Subscription	\$	9,595.00
<b>Maintenance &amp; Support Total</b>	<b>\$</b>	<b>11,509.00</b>

**TOTAL PROJECT** - Project Total Cost is based on the combined purchase of all Hardware/Software, Professional Services and Solution Maintenance from Sentinel as detailed in the attached Bill of Materials. Unbundling or materially reducing any of these essential elements of the solution may result in modifications to the cost of the remaining elements.

		Extended Price
Hardware and Software	\$	59,636.00
Solution Maintenance & Support	\$	11,509.00
Professional Services	\$	42,137.00
<b>Project Total</b>	<b>\$</b>	<b>113,282.00</b>
		<i>Plus applicable tax, shipping &amp; handling</i>

**BE6000****Cisco Business Edition 6000M Server - QTY 2**

Description	Qty
<b>Server Hardware</b>	
Cisco Business Edition 6000H Svr (M4), Export Restricted SW	2
Power Cord, 125VAC 13A NEMA 5-15 Plug, North America	4
Cisco Business Edition 6000 - Software App Version 10.X 11.X	2
Embedded License, Cisco UC Virt. Hypervisor Plus 6.x (2-cpu)	2
770W AC Hot-Plug Power Supply for 1U C-Series Rack Server	4
8GB DDR4-2133-MHz RDIMM/PC4-17000/single rank/x4/1.2v	12
2.40 GHz E5-2630 v3/85W 8C/20MB Cache/DDR4 1866MHz	4
Intel i350 Quad Port 1Gb Adapter	2
300GB 12G SAS 10K RPM SFF HDD	16
Enable RAID 5 Setting	2
Cisco 12G SAS Modular Raid Controller	2
Cisco 12Gbps SAS 1GB FBWC Cache module (Raid 0/1/5/6)	2
770W AC Hot-Plug Power Supply for 1U C-Series Rack Server	2
<b>Hardware and Software Sub-Total</b>	<b>\$24,196.00</b>

**UC License****Cisco UC License Upgrades**

Description	Qty
<b>Voice User Licensing</b>	
Top Level Sku For 11.X and Later User License - Migration	1
CUCM Software version 11.0	1
UC 7.X or earlier Version Migration	1
Royalty option for IBM database upgrade	306
Upgrade to UC Manager Enhanced	280
Upgrade to UC Manager Essential	26
<b>Hardware and Software Sub-Total</b>	<b>\$13,954.00</b>

**4321****Cisco 4321 Voice Router with PRI Interface - QTY 2**

Description	Qty
<b>Voice Gateway</b>	
Cisco ISR 4321 Bundle, w/UC License, CUBE-10	2
IP Base License for Cisco ISR 4320 Series	2
Unified Communication License for Cisco ISR 4320 Series	2
AC Power Supply for Cisco ISR 4320	2
AC Power Cord, Type C5, US, Canada	2
Unified Border Element Enterprise License - 5 sessions	4
4G DRAM for Cisco ISR 4320 (Soldered on motherboard)	2
4G Flash Memory for Cisco ISR 4300 (Soldered on motherboard)	2
Cisco ISR 4300 Series IOS XE Universal	2
1 port Multiflex Trunk Voice/Channelized Data T1/E1 Module	2
32-channel DSP module	2
4-port Network Interface Module - FXO (Universal)	2
<b>Hardware and Software Sub-Total</b>	<b>\$8,824.00</b>

**ATA 190****Cisco ATA 190 Analog Adapters - QTY 2**

Description	Qty
<b>Analog Gateways</b>	
UC 2 Port Analog Telephone Adapter	2
ATA power clip for North America	2
<b>Hardware and Software Sub-Total</b>	<b>\$342.00</b>

**CUAC****Cisco Unified Attendant Console Standard 11.x - 1 Lic**

Description	Qty
<b>Attendant Console Software</b>	
Cisco Unified Attendant Consoles 11.x	1
Cisco Unified Attendant Console Standard 11.x - 1 Lic	1
<b>Hardware and Software Sub-Total</b>	<b>\$566.00</b>

**VG204**

<b>Cisco VG204 Analog Voice Gateway - QTY 7</b>		
Description	Qty	
<b>Analog Gateway</b>		
Cisco VG204XM Analog Voice Gateway	7	
Cisco VG20X Series IOS ADVANCED IP SERVICES	7	
Cisco VG20X Series IOS IP VOICE	7	
AC Power Cord (North America), C13, NEMA 5-15P, 2.1m	7	
Yellow Cable for Ethernet, Straight-through, RJ-45, 6 feet	7	
Power Supply 30 Watt AC	7	
<b>Hardware and Software Sub-Total</b>		<b>\$5,754.00</b>

**ESNA**

<b>ESNA Cloudlink upgrade for Google Mail</b>		
Description	Qty	
<b>ESNA Cloudlink</b>		
Advanced Remote Installation	1	
<b>Esna Installation Sub-Total</b>		<b>\$1,800.00</b>

**ESNA-Transcription**

<b>ESNA Cloudlink 1 YR Transcription Subscription for Google Mail - QTY 300</b>			
Description	Qty		Special Notes
<b>ESNA Cloudlink</b>			
Speech Option A - Transcription (Subscription)	300	Note:	1 Year Subscription
<b>One Year Subscription Sub-Total</b>		<b>\$4,200.00</b>	

**Maintenance and Support**

<b>HANS™ Gold Hardware Maintenance</b>			
Description	Qty		Special Notes
<b>HANS™ Gold Hardware Maintenance</b>			
SNTC-8X5XNBD Cisco Business Edition 6000H Server, Exp	2		12 Months Duration
SNTC-8X5XNBD Cisco ISR 4321 UC Bundle, PVD4-32, UC L	2		12 Months Duration
SNTC-8X5XNBD Cisco VG204 Analog V	7		12 Months Duration
<b>Hardware Maintenance Sub-Total</b>		<b>\$1,914.00</b>	
<b>HANS™ Gold Software Support &amp; Subscription</b>			
Description	Qty		Special Notes
<b>HANS™ Gold Software Maintenance</b>			
SWSS UPGR Top Level Sku For 9.X and Later User Lic	1		12 Months Duration
SWSS UPGR Upgrade to UC Manager Enhanced	280		12 Months Duration
SWSS UPGR Upgrade to UC Manager Essentials	26		12 Months Duration
SWSS UPGRADES Cisco Unified Attendant Consoles 11.x	1		12 Months Duration
SWSS UPGRADES Cisco Unified Attendant Console Standard	1		12 Months Duration
<b>Software Maintenance Sub-Total</b>		<b>\$9,595.00</b>	

**Payment Terms:**

**Hardware/Software/Professional Services:** Labor – Net 30, Non-labor – 50% at contract, balance upon delivery for staging or to Customer location, whichever occurs first.

**Maintenance:** Net 30 days.

For products purchased pursuant to this agreement, Contractor agrees to provide storage at no additional charge for up to 120 days. If the storage period exceeds 120 days, Customer agrees to the following: a.) Customer will be responsible to pay a commercially reasonable rate for storage of purchased products from that point forward, b.) Customer will be invoiced and will be responsible to pay the unpaid balance for any products purchased from Contractor that have not been paid in full and, c.) Ownership will transfer from Contractor to Customer.

Services are quoted at a standard rate for labor from 9:00 a.m. – 5:00 p.m. If customer requires, Contractor can perform some of these services after hours at an overtime labor rate.

**Fixed Price**

For the charges listed above, the Contractor shall furnish all of the materials and perform all of the work shown on the drawings and/or described in the specifications entitled Appendix A, as annexed hereto as it pertains to work to be performed at designated customer locations. Any alteration or deviation from the above specifications, including but not limited to any such alteration or deviation involving additional material and/or labor costs, will be executed only upon a written order for same, signed by Customer and Contractor, and if there is any charge for such alteration or deviation, the additional charge will be added to the contract price detailed above.

**This quote is valid for 45 days from 02 / 23/ 2017**

CUSTOMER:  
Village of Downers Grove

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

P.O. #: \_\_\_\_\_

CONTRACTOR:  
Sentinel Technologies, Inc.

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_