Report to / Rapport au :

OTTAWA POLICE SERVICE BOARD
LA COMMISSION DE SERVICE DE POLICE D'OTTAWA

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Submitted by / Soumis par :
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SUBJECT: MIGRATION FROM THE E911 NETWORK TO THE NG9-1-1 NETWORK

OBJET: MIGRATION DU RÉSEAU E911 AU RÉSEAU 9-1-1 PG

REPORT RECOMMENDATIONS

That the Ottawa Police Service Board delegate authority to the Chief of Police for the purchase of equipment and professional services from Netagen for the future migration of the 9-1-1 connections for both the Ottawa Police Service (OPS) and Ottawa Fire Services (OFS) from the legacy Enhanced 9-1-1 (E911) network to the new Next Generation 9-1-1 (NG9-1-1) network, as mandated by the Canadian Radio-television and Telecommunications Commission (CRTC), for the amount of $912,734.56 before applicable taxes.

RECOMMANDATIONS DU RAPPORT

Que la Commission de service de police d'Ottawa délègue au chef de police le pouvoir d'acheter des produits et des services professionnels de Netagen pour la migration future des connexions 9-1-1 du Service de police d'Ottawa ainsi du Service des incendies d'Ottawa de l'ancien réseau 9-1-1 évolué (E911) au nouveau réseau 9-1-1 de prochaine génération (9-1-1 PG), comme l'exige le Conseil de la radiodiffusion et des télécommunications canadiennes (CRTC), pour un montant de 912 734,56 $ avant les taxes applicables.

BACKGROUND

In 2017, the Canadian Radio-television and Telecommunications Commission (CRTC) mandated that all portions of the Canadian telephone networks that handle any calls to 9-1-1 be upgraded to a new, all-voice-over-Internet-protocol (all VoIP) standard; the current migration deadline for all agencies who answer these calls is March 2025. This migration will allow for enhanced calling features (sending multimedia to emergency agencies, video calling, etc.). This upgrade is especially important as the public are increasingly reliant on wireless devices (cell phones) to make calls to 9-1-1 and the current network is incapable of supporting these features. It should be noted that most of these new enhanced features will become available sometime after 2025.

The OPS began its implementation of NG9-1-1 technologies in 2019 with the procurement of compatible equipment and has since been recognized nationally as a leader in the development and implementation of this emerging NG9-1-1 technology. Many of the new systems and processes that will soon become a standard throughout Canada were only recently developed during the OPS' implementation project which, in 2022, saw the OPS becoming one of the first agencies in Canada to have an NG9-1-1-compatible telephone system working on the current E911 network. Since then, internal workflows and processes have been updated to support the new technology, and most of the work needed to be prepared for this migration has been completed.

Work has now begun on the final stages of the NG9-1-1 program. This involves onboarding OFS' Communications Centre onto the OPS' NG-ready infrastructure and then unplugging both agencies from the current network while, at the same time, plugging-in to the NG9-1-1 network. Both activities will require work and efforts from several different vendors and providers.

While this request is for the work required to complete the final portion of the NG9-1-1 program, the OPS must proceed with the purchase immediately. Proceeding immediately will allow the OPS and the vendor to secure the appropriate resources and ensure that the transition can occur as early as feasible.

DISCUSSION

The implementation of NG9-1-1 represents a significant leap forward in emergency communication services, aligning with modern digital advancements. As part of this transformative process, three key initiatives have been identified: the upgrade of the Private Branch Exchange (PBX) system, the establishment of a dedicated NG9-1-1 laboratory, and the integration of a comprehensive Wallboard for operational reporting.

PBX Upgrade

Upgrading the PBX system is a critical step in preparing for NG9-1-1 implementation. To date, the PBX upgrade process has involved a comprehensive evaluation of the current PBX setup to identify components that require replacement or enhancement. The upgrade of those components identified will necessitate the procurement of new hardware components and other communication equipment needed to handle the increased data throughput and reliability demanded by NG9-1-1 services.

Also, as part of the PBX upgrade, and to ensure continuous operation during emergencies, a dual-site configuration is being implemented, allowing for seamless failover capabilities. Upon completion of the upgrade, each site will be equipped with identical hardware and configurations, providing redundancy.

Furthermore, the network's security apparatus, in particular the firewall, must be updated to safeguard the enhanced data flow and protect against cyber threats. This will involve configuring new firewall rules and upgrading the firewall hardware to manage the increased traffic efficiently.

Finally, a robust maintenance and support plan is essential for the new components purchased and used as part of the PBX upgrade. This includes regular updates, patches, and technical support to address any issues that may arise. This comprehensive approach ensures that the PBX upgrade not only meets the current operational requirements but provides scalability for future expansions.

NG9-1-1 Lab

Establishing an NG9-1-1 Lab is a critical step in ensuring the successful deployment and ongoing evolution of Next Generation 911 systems. This foundational phase involves a series of tasks, beginning with the procurement of new components essential for building a robust infrastructure. The lab will serve as a controlled environment where various aspects of NG9-1-1 can be tested, including initial implementation and subsequent updates. It's a space dedicated to development, allowing for thorough testing without impacting live emergency response systems.

Additionally, the lab setup will incorporate rigorous change management processes to ensure that any modifications are methodically assessed and understood prior to full implementation. Once operational, the lab will require ongoing maintenance and support to manage these new components effectively, ensuring they remain up-to-date and functional to meet the evolving demands of emergency communication systems. The NG9-1-1work is indispensable, as it lays the groundwork for a seamless transition to NG9-1-1 services, ultimately enhancing public safety infrastructure.

Wallboards

Wallboards are essential tools in the operational monitoring and reporting of queues, particularly in the context of NG9-1-1 systems for the OPS and the OFS. Wallboards provide real-time data visualization that is crucial for making informed decisions quickly. The configuration of these wallboards is tailored to display key metrics that influence operational choices, such as call wait times, service level, and agent availability. This immediate access to data enables managers to adjust resources on the fly, ensuring that the response to emergency calls is both timely and efficient. Furthermore, the ongoing maintenance and support of these wallboards are vital for the sustained success of NG9-1-1 services. Over a span of five years, this support ensures that the system evolves with technological advancements and changing operational needs, maintaining the integrity and reliability of emergency response services.

Sole Sourcing

The procurement of goods and services through a single vendor, commonly known as sole sourcing, can be justified when the vendor offers a unique service that is not available elsewhere. In this case, the vendor (Netagen) has been selected to be the wirelines support provider through a rigorous Request for Tender (RFT) process, ensuring that a transparent and competitive selection procedure was applied and adhered to. Of note, this vendor has been the only one to successfully implement NG9-1-1 in Canada to date when using the Avaya/Komutel framework, doing so for the Toronto Fire Services.

NG9-1-1 is a critical infrastructure upgrade that enhances emergency response capabilities. Netagen's unique qualification in this domain is a compelling reason for sole sourcing. Avaya only recognizes two vendors that are currently offering this service and the only alternative, our previous wireline contract holder, has proven inadequate in facilitating the transition to NG9-1-1, further solidifying the rationale for this procurement strategy. There are currently 242 PSAPs in line for the migration and they are all competing for the same vendors. Sole sourcing in this context ensures continuity, expertise, and sets the OPS up for successful implementation of essential services for public safety communications within the March 2025 deadline.

FINANCIAL IMPLICATIONS

The total cost is $1,029,687.30 (or $912,734.56 before taxes) based on the quoted after-tax amounts provided by Netagen.

Costs are broken down as follows:

PBX upgrade:

- Annual maintenance and technical support, which includes software updates, technical support, and vendor response support is $20,216.62 per year before taxes, This totals $114,223.91 after tax over 5 years.
- Hardware and licensing amount to a one-time cost of $258,630.31 after tax.
- Professional services and hardware installation/configuration amount to a one-time cost of $198,017.81 after tax.
- Professional services firewall installation/configuration amount to a one-time cost of $60,599.10 after tax.

NG911 Lab:

- Annual maintenance and technical support, which includes software updates, technical support, and vendor response support is $10,338.64 per year before taxes. This totals $58,413.32 after tax over 5 years.
- Hardware and licensing amount to a one-time cost of $86,296.98 after tax.
- Professional services and hardware installation/configuration amount to a one-time cost of $63,747.19 after tax.
- Professional services and firewall installation/configuration amount to a one-time cost of $30,299.55 after tax.

Costs associated with the wallboards amount to $159,549.13 after tax. This includes necessary renewals over 5 years.

Costs noted in this report have been budgeted for in the 2024 Budget. The Telecommunication Section has sufficient funding available within their capital budget to accommodate the cost of this purchase in the NG9-1-1 Continuous Improvements account (IO #910995). All maintenance agreements are being aligned to our current wireline support timeframes to simplify renewals.

CONCLUSION

The OPS, along with all other Canadian Public Safety Answering Points (PSAPs), are obliged to update and/or replace their 9-1-1 call handling infrastructure to continue to provide 9-1-1 answering services after the country migrates to the NG9-1-1 network design, as mandated by the CRTC before March 2025. This mandatory migration affects all PSAPs within Canada and is required in order to continue taking 9-1-1 calls after 2025; all legacy 9-1-1 systems will be decommissioned.