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Position Paper on Fire Department Response Policies
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1 Objective

The objective of this document is to provide information with which a community can address the growing number of issues related to the receipt of electronic fire alarm signals by fire departments. These issues include;

- The increasing number of monitored systems and thus increased number of false fire alarm signals,ⁱ
- The perceived lack of urgency by fire departments with regards to maintenance and testing of fire alarm equipment (including fire alarm and fire alarm monitoring systems)
- The delays inherent in relaying a fire alarm signal to the appropriate response agencyⁱⁱ
- Recognition that monitored commercial fire alarms are typically comprised of two components: fire panels / evacuation systems installed by electrical firms or fire alarm companies and secondly, of fire alarm transmitters installed by alarm companies.

It is the intent of this document to present CANASA's vision with respect to how fire departments and fire alarm companies should interact, both now and in the future. In order for the fire industry to move forward, it must strive to seek out, evaluate and adopt industry best practices. The rate of change in the fire industry that has occurred in the last 5 years shows no signs of abating, and participants in the industry must learn to accept, grow and change, or face becoming obsolete.

For the purpose of this document, fire alarm companies are solely those companies installing, servicing and/or monitoring fire alarm transmitters for commercial applications. For residential applications, the herein referred to fire alarm companies may also install smoke alarms, heat detectors and carbon monoxide detectors. This document does not address false alarms or solutions caused by fire panels / evacuation systems, malice activation of pull stations or property owner / manager errors resulting in the transmission of fire alarm signals.

2. Recent History [HBH1]

The primary purpose of the fire services community is to protect lives and preserve property. Inherent in this philosophy is the desire to respond as quickly as possible in an emergency situation in order to fulfill that mandate.

With the arrival of monitored alarms it seems an obvious fit that this technology not only be able to keep people safe in their homes and in places of work with local annunciation, but that it can also be used to notify the people most appropriate to respond in the event of an emergency quickly and accurately.

For the purpose of this paper, the “collective” police experience with regards to alarm monitoring and lessons learned will be used to illustrate what mistakes the alarm and fire industries should strive not to repeat.

2.2 Police Experience

In the 1980’s burglar alarm systems began to proliferate throughout communities as changes in technology made the hardware affordable to homeowners. The opportunity to deliver these alarms directly to police departments presented itself once police departments realized the timesavings that could be achieved in responding to alarm events. Unfortunately, it soon became evident that as the number of installed systems rose, false alarm incidents were rising as well, consuming significant amounts of police time and effort to investigate.

Police departments in many communities therefore removed this service and shifted the signals to receivers in monitoring stations. However, due to the proliferation of security systems in the residential market, a disproportionate amount of time was being spent in responding to false alarm dispatches. As a result, an inconsistent and often contradictory set of by-laws, protocols and penalties were introduced not just in Canada but throughout North America in an attempt to address this issue.

The result: many municipalities now require permits to be issued each year to have burglar alarm systems monitored, in some areas this permit has a cost for both residential and commercial clients. Penalties for false alarms were also imposed, making security systems in many jurisdictions more expensive to own and operate. The other unfortunate consequence of this process is that police departments have now come full circle and are in many cases refusing to respond at all to certain alarms unless certain conditions have been met. Pre-verification from keyholders or mandatory investigation by guard response services are examples of such conditions. Such pre-verification processes have increased risks for private response companies, caused

delays in having authorities respond and have created some potential risks to the safety of the public and the security of a home or business.

The industry has since worked hard at establishing a working relationship with police departments nationwide to address the issues mentioned above. As a result of this collaboration, educational programs for the public as well as programs within signals receiving centres to mitigate the number of false alarms are being implemented around Canada and the U.S. with positive results. Enhancements and design changes to products have helped “pinpoint” the source of alarms and provide audit trails to support troubleshooting and investigations, thus minimizing or even eliminating repeat false alarms.

2.2 Fire Experience

In the late 80’s and early 90’s fire departments were looking to improve response times to fires. The alarm industry responded by offering to place receiving equipment into fire departments to ensure that fire alarm signals were received as quickly as possible. The only “catch” with this scenario, was that fire departments were now required to deal with system tests, supervisory traffic and false alarms in addition to dealing with valid fire alarm signals. It also put fire departments in the position of having to deal directly with more stakeholders including the end user, the alarm company and in many cases utility providers (hydro and telephone companies). It soon became evident that the amount of administrative work required to manage the system was drawing resources away from dealing with emergencies. In the late 90’s, as a result fire departments reversed themselves and began to ask that equipment be removed in order for them to spend their time focusing on their “core business” -- responding to emergenciesⁱⁱⁱ.

The reversal lasted less than a decade. Early in the new millennium, shrinking municipal budgets and fire department frustration with the alarm community was growing. Fire department response was being slowed down by central station procedures and poorly installed and maintained monitoring equipment was a growing cause for concern^{iv}. “Little or no consideration was given to the fact that commercially monitored systems connect to an output device next to the fire alarm panel which notifies the monitoring station when the panel goes into alarm.”

3. Legislation and Standards

The safety of every Canadian is governed by different sets of regulatory and standards bodies, some of which have been in existence for over one hundred years. Each year realizes new advancements in technology and operational best practices and these bodies exist to investigate, evaluate and incorporate the best of these achievements into sets of standards and codes that the industry participants must meet in order to effectively service individual, regional and national jurisdictions. Consideration must be given to compliance for any monitoring station dealing with life / safety and the protection of property. Such legislation and standards are in place to set minimum standards for processes, procedures, performance and redundancy. Legislation and standards which currently apply to the alarm industry must provide the same public and private safeguards when the public is protected / monitored through fire department direct monitoring.

3.1 National and Provincial Fire Codes

Canada has a national fire code that regulates and protects the citizens of Canada and each province subsequently has a provincial fire code that addresses local needs. The national and provincial fire codes both reference a series of other documents including national and provincial building codes and ULC documents which are important in the enforcement of standards needed to keep citizens safe.

3.2 National and Provincial Building Codes

Building codes are used to govern how structures are built with regards to safety and how the components of these structures function. They regulate such things as the physical materials used as well as how the structures are physically put together. The building codes become part of a comprehensive package when referenced by the fire codes. Building codes also define which classifications of facilities are mandated to have monitored Fire alarms.

3.3 Underwriters laboratories of Canada (ULC)

ULC evaluates and tests many different products that people come in contact with every day to make sure these products are safe and won't cause harm. ULC certificate programs also ensure that installation and service companies and their monitoring stations are qualified, have trained staff, deploy certified products and follow established processes and standards. For a ULC certified installation, the installation & service company, monitoring station and the product must be listed by ULC. ULC has made significant advances over the last several years to revise and update standards which govern the design, installation, maintenance and monitoring of fire alarm systems. Consequently the provincial and national building codes now reference these standards specifically CAN/ULC-S561-03, "Installation and Services For Fire Signal

Receiving Centres and Systems”, and CAN/ULC-S559-04, “Equipment For Fire Signal Receiving Centres and Systems”, which in turn are referenced by the provincial and national fire codes. These changes now give fire prevention officers the authority to enforce the standards.

3.4 National Fire Protection Association (NFPA)

The National Fire Protection Association (NFPA) maintains a comprehensive set of standards and guidelines designed to keep citizens and emergency responders safe. The standards produced by the NFPA are recognized across North America and serve to impose levels of service on many aspects of the fire industry including fire alarm system design and installation, central station operations and fire department response. There is extensive harmonization between NFPA, various building and fire codes, Fire Codes and ULC standards.

3.5 Canadian Security Association (CANASA)

The Canadian Security Association provides a forum for education and information in support of developing best practice standards and guidelines for all alarm industry parties located locally, regionally and nationally. Areas of interest include system design, manufacture, installation, service and monitoring.

3.6 Central Station Alarm Association (CSAA)

The Central Station Alarm Association provides a forum for education and information in support of developing best practice standards and guidelines for all alarm industry personnel involved in system design, manufacture, installation and monitoring.

3.7 The Collective Achievement

Different associations represent alarm companies provincially, nationally and throughout North America. They are making great strides in educating and certifying personnel and are responding to calls to make the alarm industry self regulating in order to better meet the needs of both consumers and emergency service providers. These associations are actively soliciting input from member agencies and industry alike in order to draw up comprehensive plans, which will address current and future issues as they are identified.

As a result of the improvements, updates and additions to codes and standards that the above listed organizations and other contributors have made to the fire industry over the last number of years, fire departments are now in a position as the AHJ to use these new tools to not only enforce the provision of quality alarm system installation, service and monitoring in their respective communities, but also to impose standards of operation and maintenance on premises owners.

4 Going Forward

4.1 Statements of fact

- The alarm industry has an established consumer base already in place. Market research has shown that introducing a new competitor into an established market will not uncover new business but simply put in motion a redistribution of already existing business. This results in zero sum market growth.
- The alarm industry has already invested substantial sums of money in equipment, data networks, back-up power systems, automation systems and infrastructure. Fire departments do not always take into account that equipment and spare parts must be purchased and housed.
- The alarm industry has already invested in the hiring and training of qualified personnel to staff monitoring stations. Significant investments have also been made in building ULC listed monitoring stations, ULC listed receiving equipment, generators, UPS systems, redundancy in equipment, automation systems, etc.
- Several Canadian communities have come to recognize that timely response is key to saving lives. CANASA is working with many municipalities to come up with positive solutions to continue to provide timely response.
- If a fire department currently owns a CAD system there may be a significant monetary investment required for an interface to be built to integrate data, which it receives electronically.
- Alarm companies are comfortable dealing with all of the administrative issues that go along with monitoring such as dealing with supervisory alarms, call list updates, system testing, customer complaints, utility failures (hydro, telephone service provider, etc), traffic generated by storms and other bad weather situations, managing annual inspection programs, etc. These types of activities consume administrative and support resources.
- CSAA research has shown that alarm systems covered by a comprehensive maintenance and testing plan consistently perform better over time and generate far fewer false alarms. The alarm industry has already invested the time and effort to put these agreements and plans in place.
- Alarm companies already have existing administrative processes in place to take care of data maintenance, telephone line orders and invoicing.

- A fire department is a public sector entity. In instances where fire departments choose to establish their own monitoring facilities, the public sector in effect, enters into a position of direct competition with the private sector. A fire department would have to go through the ULC listing process in order to monitor any building with a ULC certificate, which includes many high-risk facilities. This is both time consuming to administer and costly. Established alarm monitoring companies already have this listing. Such compliance also requires administering a certificate program for each protected premises.
- The presence of fire department administered monitoring creates added costs for businesses and homeowners, which, would be required to have separate systems for fire and for burglary.
- Service dispatching, call list maintenance, system testing and other system related activities will require considerable resources at fire department direct connect stations.
- If a fire department has its own monitoring station, transmitters and receivers must all meet appropriate industry standards.
- It is important to understand that the alarm industry monitors an output from the fire alarm panel and/or the switches on sprinkler risers. False fire alarms are often unrelated to the transmitters monitored and may be caused by other factors:
 - Actual fire or sprinkler pipe Leak / burst
 - System not placed “on test” when maintenance is done by fire panel service company or property manager.
 - Hand pull activated mischievously
 - Contaminated or faulty smoke detector
 - Work on sprinkler stack, resulting in water-flow switch activation

Recommended Model Fire Alarm Policy;

Work with alarm industry and property managers to enforce minimal signals delays, and achieve target “on site response” as defined through the National Fire Code and ULC.

Augment ULC fire department audits of inspections, maintenance and dispatch delays. It would be at a fraction of the cost of a fire department operated alarm and monitoring Company.

Fire departments, which, choose to operate monitoring facilities, must adhere to applicable ULC stands.

Escalated fines for alarms not being taken “off line”, where such result in dispatch

Mandate fire department lockboxes and commercial fire alarm licensing for fire department cost recovery in resources and facilities, in lieu of extensive costs to start an alarm monitoring facility.

CANASA is willing to assist in finding solutions to meet the safety of all consumers, and address the concerns of any Canadian fire department. However, in order to meet these objectives, a consultation process between the parties is essential.

4.2 New Industry Developments

The main concerns voiced to date by fire departments have been that alarm companies (a) do not respond in a timely manner to repair defective equipment, resulting in false alarms and (b) the time it takes to call in a fire alarm is too slow due to processing procedures at the signals receiving centre (SRC).

As mentioned in section 3 -- Legislation and Standards, many changes and improvements have been made to the codes and standards which regulate the operation of fire alarm installation and fire alarm monitoring companies provincially and across Canada. These changes represent many hours of work by people with a vested interest in making the alarm industry accountable to itself and others and raising the overall level of service provided by the industry.

One of the most significant events to take place in the course of revising existing standards is the imposition of time restrictions on the delivery of data from the SRC to

the fire department. The early version of the ULC document ULC/ORD-C693-1994 made vague references regarding acceptable time frames for delivery of fire alarm signals to the fire department from the SRC, but the new standard CAN/ULC-S561-03 states that the signal must arrive within 30 seconds. The standard also endorses the use of electronic retransmission to meet this time requirement, which is a significant advancement over the older version of the standard. The standard states in section 9.4.4.1.1 (A) that;

The fire signal-receiving centre shall:

Contact the appropriate public fire service communications centre within a maximum of 30 seconds of the receipt of the signal.

The standard also states in section 9.4.4.1.1 (D) that;

Where available, electronic re-transmission of fire alarm signals can be used to satisfy the time requirement in 9.4.4.1.1. (A) in concert with fire signal receiving centres service.

In essence this is saying that there will be no pre-verification of alarm systems. A fire department can now take advantage of the various enhancements to enforce standards of service on both the alarm service provider and the customer without having to invest in a startup as a monitoring provider. For example, to improve installation and maintenance performance, a fire department may choose to require all buildings in the municipality wishing to be directly connected to the fire department to hold a valid ULC certificate for fire. Having this certificate ensures that a property owner's system has been installed by qualified personnel and is tested and maintained on a regular basis. ULC may then inspect the premises over the term of the certificate to ensure compliance, which in effect adds an extra pair of hands to the fire prevention team. CSAA research also shows that a system in good repair with a history of regular testing shows markedly reduced false alarm occurrences than those systems, which are not^v.

A fire department wishing to receive fire alarms directly into the fire department can now take advantage of electronic re-transmission technology to facilitate the process without having to install any receiving equipment in the communication centre. Fire departments that already have alarm equipment installed in the communications centre can also take advantage of electronic re-transmission.

It layers over all existing technology currently installed and has been proven in independent field studies to reduce the transmission time of fire alarm signals from the SRC to the fire department by an average of two full minutes^{vi}.

Yet, the re-transmission of fire alarms maintains existing links to monitoring stations, thus providing a secondary communications path and infrastructure as an additional safeguard. It also eliminates the need to add secondary systems that are distinct to fire alarm monitoring, where certified multi purpose transmitters are already in place. The end result is that property owner's are not discouraged from installing fire systems and monitoring where not mandated by law, not to require upgrade / replacement existing systems to separate fire, supervisory and intrusion.

5 Meeting Future Challenges

It is CANASA's belief that the alarm industry as a whole has made a significant contribution to life and property safety over the years. As with the evolution of any new technology, progress brings with it growing pains and a learning curve and participants must learn to accept change as an ongoing process rather than a one-time obstacle to be overcome.

Alarm companies across Canada and North America have invested millions of dollars in equipment, staff and training in order to provide the best service and performance possible when it comes to alarm installation and monitoring. It only makes sense to take advantage of the collective knowledge gained by industry members over the years in looking to the future. Likewise, fire departments have made huge investments in research, training and equipment over the years and have seen significant changes to the industry over time.

In as much as it makes no sense for the alarm industry to decide to enter the fire fighting business, it also makes no sense for fire departments to become monitoring centres and/or alarm companies. Both industries have developed expertise in their respective fields over the years and though it might seem appealing to take on a new line of business, common sense and research should prevail and lead to the conclusion that a cooperative partnership between the industries makes the most sense both operationally and fiscally.

As mentioned in earlier sections, there have been significant changes over the last few years in both the evolution of fire alarm equipment and associated systems, and in the codes and standards that regulate their use. Successful partnerships already in place between fire departments and alarm industry participants have produced progressive and practical results. Examples include;

- Policies, which show fire department leniency and fairness in regards to false alarms if the premise owner participates in a false alarm reduction program. Such measures include having a current maintenance contract in place with regular system inspections and system testing;
- Policies requiring premise owners to obtain ULC certification for fire alarm and monitoring systems
- By-laws to charge for excessive false alarms. In most cases the by-law is used as leverage to gain cooperation from the premises owner to have the system put under a maintenance contract.

Fire departments participating in these types of partnerships have already realized that both parties bring different skill sets and expertise to the table and have looked to those differences to create tools to enforce and enhance the benefits that the alarm industry can provide.

The following is an example of how both parties can cooperate in order to achieve a result that benefits the premise owner, the fire department and the alarm company.

6 Conclusion

Cooperative ventures between fire departments and alarm companies allow each participant to maintain focus on their respective areas of discipline while taking advantage of the benefits that each other bring to the table. Using this approach, the fire department, alarm company and premise owner all benefit since the combined efforts of all parties far outweigh the single contributions of each. To quote an old adage, the result is greater than the sum of the parts.

CANASA believes that the alarm industry can and will achieve results that meet and exceed benchmarks currently being set and enforced by fire departments and codes and standards bodies across the nation. By combining effort and strategy rather than creating increased marketplace competition between both the alarm and fire industries, a new and higher level of performance can and will be achieved which will benefit all participants. Fire departments need to concentrate on their core business of fighting fires and should be seeking relationships with strategic partners that can furnish the information that they require to do that job in an accurate and timely fashion. Establishing a relationship with the alarm industry is a major step for it brings with it benefits for all parties involved.

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Holly Barkwell-Holland, CSAA Survey Results (FMTI Sept 2004)

Glossary of Terms

AHJ (Authority Having Jurisdiction) – The decision-making authority for fire-protection systems, building features and suitability for occupancy with respect to fire safety.

CANASA (Canadian Security Association) –The Canadian Security Association is a national non-profit organization, established in 1977 and dedicated to promoting the interests of its members and the safety and security of all Canadians. CANASA is the national voice of the security industry and has a membership of more than one thousand companies across Canada.

CAN/ULC-S561-03 – ULC standards document “Installation and Services For Fire Signal Receiving Centres and Systems” outlining requirements for these services.

CAD (Computer Aided Dispatch) system – A system of computers and or systems used by emergency service agencies to provide decision making support and assist with resource deployment and tracking.

Central Station – A location outfitted with alarm receiving equipment to monitor remote premises. The equipment is supervised by a single or multiple operators who notify the appropriate authority (Police, Fire or Ambulance) when the equipment detects an alarm condition.

CSAA (Central Station Alarm Association) – a trade association that represents companies offering security (alarm) monitoring systems through a central station. It also represents companies that provide services and products to the industry.

NBC (National Building Code) – apply to the construction of buildings, including extensions, substantial alterations, buildings undergoing a change of occupancy, and upgrading of buildings to remove an unacceptable hazard.

The NBC is prepared by the [Canadian Commission on Building and Fire Codes](#) and is published by the National Research Council of Canada.

NFC (National Fire Code) – The National Fire Code of Canada establishes fire safety regulations and requirements for both occupants and emergency responders – inside and outside of new and existing buildings.

NFPA (National Fire Protection Association) – Reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating consensus codes and standards, research, training, and education.

Provincial Building Code – A Building Code is a collection of regulations and requirements (such as exit sign and smoke detector requirements), which pertain to specific subjects (such as exiting and fire protection systems) that regulate specific practices (such as designing, constructing or remodeling buildings). All codes have the same purpose no matter what the specific subject may be: to protect the health, safety and welfare of the public and building occupants.

Provincial Fire Code – Contains written elements of the various provincial requirements not covered by the National Fire Code for each province.

SRC (Signals Receiving Centre) – Another term for a Central Station

ULC (Underwriters' Laboratories of Canada) – Underwriters' Laboratories of Canada (UL Canada) is an independent, not-for-profit product safety testing and certification organization. ULC is accredited by the Standards Council of Canada, under the National Standards System.

ULC Certificate – A certificate issued by ULC which states that a particular fire alarm monitoring system has been installed and maintained by certified and competent personnel and that the installation itself meets or exceeds a list of criteria set out by the ULC office.

End Notes

ⁱ As evidenced by the number of false alarm policies being implemented across the country. As an example, attached is the false alarm by law implemented by Mississauga, ON Fire Department. Up to 4 false alarms allowed with implementation of direct monitoring per year before charge of \$600. City of Toronto, ON, Port Coquitlam, BC, Halifax, NS are examples of other Canadian cities with false alarm by-laws in place.

ⁱⁱ Cyril W. Hare, *Response Time Study of Electronic Direct to Fire Department Notifications For Fire Monitoring Technologies International Inc.* (Leber/Rubes June 2001), p1-9

ⁱⁱⁱ Based on FMC experience with direct connect customers requesting removal of alarm receiving equipment. Between 2004 – 2006 eleven Fire Departments were either upgraded to OPEN ACCESS™ or had the receiving equipment removed altogether.

^{iv} Cyril W. Hare, *Response Time Study of Electronic Direct to Fire Department Notifications For Fire Monitoring Technologies International Inc.* (Leber/Rubes June 2001), p4 paragraph 5

^v Holly Barkwell-Holland, Survey Results (FMTI Sept 2004), p4

^{vi} Based on combined results from Leber/Rubes study (Leber/Rubes June 2001) and The City of Ottawa study conducted in 1999.