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Industry Sector
Building Technologies Division

Zug/Switzerland, March 25, 2010

Technical article

Siemens - working towards open standards with ONVIF

The security industry is currently at a crossroads. Despite the way that the industry has grown historically - with manufacturers of security products and systems attempting to increase and protect their market-share by developing their own competing, proprietary methods of system connectivity and communication - it is now generally accepted amongst the most forward-thinking companies in the market there is a genuine need for common standards. Just as the electrics, electronics and telecommunications industries eventually collaborated on an established and documented norm for the transfer of computer data in the 1970's and 1980's (to enable the global networking of all computers that is now known as the world-wide web or the internet), so the security industry must also establish its own rules for its various technologies and disciplines.

Leading security systems and solutions provider, Siemens, stands with those who think that the future of security management will soon be based on open standards across all the industry's disciplines. With field devices being seen increasingly as commodity products, the concept of singular 'proprietary' systems will soon be a thing of the past. Siemens has a close understanding of its customers' demands and intends to answer those demands and those of most of the market by working towards open standards and global interoperability for network video devices with the Open Network Video Interface Forum (ONVIF). Siemens believes that open standards within the industry would bring benefits to system integrators, manufacturers and end-users alike.

The benefits to the end-user alone, such as ease of use, flexibility in product selection and confidence that the chosen system will be future-proofed, are numerous and critical to the growth of the market. While the industry has no accepted open standards, it is the end-user that is suffering most. When a customer presently chooses a complete system from a single

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manufacturer, it typically results in the customer being 'locked' into that manufacturer's products and systems - and therefore being dependent and vulnerable to the vagaries of that manufacturer's service, continuing success and reasonable pricing policies. There is simply no incentive for suppliers with such captive customers to keep costs competitive, to provide real customer service or, indeed, to work towards furthering technology for the general good of the industry.

Network video, the field in which system integrators were under increasing financial pressures because of the cost inefficiency of proprietary systems, was the first discipline within the security industry to indicate the pressing need for an established and documented norm for the transfer of data. For instance, when a recording system manufacturer wants to record the video stream of an IP camera from another manufacturer, a software-driver based on the application-programming interface (API) of the camera manufacturer must first be written – either by the camera maker or the recorder manufacturer. Different IP video drivers are required for each manufacturer and within some makers' ranges, even different camera models necessitate the writing of separate drivers. There are also no agreed standards that govern what compression algorithm is used (MJPEG, MPEG-4 or H.264) and while each algorithm is a 'standard' in itself, manufacturers are free to choose which profile and level is contained in their own implementation.

There are different groups currently pursuing the same fundamental goal of bringing universal interoperability to IP-enabled video devices to provide increased flexibility and functionality. The Open Network Video Interface Forum (ONVIF), originally started by manufacturers Axis Communications, Bosch Security Systems, and Sony Corporation, has developed a standards document based on Web Services and XML that also determines an established protocol for the sharing of information by IP devices on a system level.

As a leading player in the security market, Siemens realized the importance of its decision, considered the implications (both technical and political) very carefully and chose to support ONVIF, a non-profit organization. Siemens chose to support ONVIF, because it is forward-looking, is based upon current IT infrastructures and includes video interface for video analytics. Its Web Service-base facilitates fast and simple integration, enables a broad, devices-support capability.

Siemens is already introducing standardized interfaces in the video processing chain and is looking to do the same with access control systems. Michael Lützeler, Innovation Manager of Siemens Building Technologies, says: "In today's security environment, state-of-the-art technology is important, but providing a truly comprehensive, long-term solution requires more. In the best of worlds, it would mean providing a way for contemporary systems to communicate, not only with each other but also even with future systems. At Siemens, we earnestly believe the future of

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security management lies in open standards. We understand that a global interface standard will make it easier for end-users, integrators, consultants and even manufacturers to take advantage of the possibilities offered by today's network video technology. The full potential of today's security technologies will be realized, only by standardizing and thus allowing a compatibility path between different brands. That is why we joined ONVIF and are active in working towards providing security solutions via open standards to ensure real interoperability. At the moment we are looking into network video solutions as there is currently greatest need in this area. But it is Siemens' intention, through ONVIF, to expand the quest for open standards into other security disciplines."

Founded in 2008, ONVIF is open to all companies and interest groups who would like to participate in the work of creating a global standard for network video products. The forum has clearly defined membership rules with membership at three different levels of engagement to accommodate individual levels of participation. The forum is driven by the interest of its members, there is transparency and clarity in all its activities and decisions are taken in a democratic manner - all members having equal voting rights (one company - one vote) regardless of company size. Siemens plays an active part on the steering committee, which is responsible for its overall strategy and budget. It was the first systems integrator to become a full member, the founding companies and first full members being mainly product suppliers. As such, Siemens is able to bring a different perspective to the committee work, helping to set goals from the integrators' point of view - with a closer understanding of the end-users' current needs and future requirements.

The ONVIF specification defines a common protocol how network video devices should exchange information such as live video, audio, metadata and control information regardless of manufacturer. ONVIF conformant network video transmitters and receivers from different manufacturers will be able to communicate with each other by requesting and sending live view video streams. The specification will also ensure that compliant devices are automatically discovered and connected to network applications such as video management systems. It will become much easier for end-users, integrators, consultants and manufacturers all to take advantage of the possibilities offered by network video.

Neville Miles, Head of Business Segment Systems & Products, Siemens Security Solutions, a member of ONVIF's steering committee elaborates: "ONVIF chose Web Services technology because it is the most suitable to guarantee interoperability and, as such, is appropriate for other applications and devices such as access control. There are already several well-tested frameworks existing in Web Services, the technology allowing simple and fast integration thanks to source-code generation through the standardized WSDL. This relieves manufacturers and developers from the need to interpret the interface, as the generated code provides built-in data

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type conformance and guarantees interoperability."

The ONVIF specification offers integrators and ultimately end-users: a cost-effective solution with increased flexibility; greater choice in specifying products from different manufacturers; the use of the most suitable combination of conformant video products regardless of manufacturer; the ease of meeting specific needs thanks to interoperability of different brands; simplified installation; 'future-proofing' of systems; reduced cost of ownership (interoperable products having simplified installation and lower integration costs) and therefore a more secure investment.

For manufacturers the open standard will mean: real interoperability with products from other manufacturers without loss of brand identity; extended market opportunities (as products and software are used globally); reduced development costs through implementation of established standards; increased market interest for network video products and IP-based security/surveillance solutions. By eliminating the need for manufacturers to develop their own separate communication protocols, an open standard will enable them to devote their efforts and their budgets on developing the security capabilities of their products and devices.

The security industry is now slowly but surely taking up the challenge of adopting open standards. This will undoubtedly lead to increased competition in development, greater innovation within each discipline and thereby greatly improved systems. Hopefully it will result in the security industry making significant technological advances. The movement and commitment currently being shown by organizations such as ONVIF and Siemens along with others should, in a relatively short time, lead to the freedom (to create systems comprising compatible devices from several manufacturers) for which integrators and end-users are now clamoring in their bid to build 'best-of-breed', integrated systems consisting of the very latest and best technologies in viewing, recording, real-time analysis and forensic search.

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