

SYSTEMS INTEGRATION AND MANAGEMENT SYSTEMS INTEGRATION AND MANAGEMENT THE KEY TO EFFECTIVE AIRPORT SECURITY

More so than other public facilities, modern Airports demand a security system that caters for an ever-increasing spread of risks.

Conventional CCTV surveillance systems are no longer up to the task, according to Dr Bennie Coetzer, managing director of image technology specialist Protoclea Advanced Image Engineering.

“The sheer proliferation of crime tells us that simplistic approaches to security are just not good enough any more,” says Dr Coetzer. “The increasingly sophisticated nature of crime demands a far more comprehensive approach to solve the problem. It is no longer about equipment – the hardware such as cameras, sensors and alarm systems. Today it is all about how you manage and make best use of the information that is provided by the equipment.”

For effective management of information and incident control at Airports, it is essential that all components of the surveillance system, parking control system, fire, smoke and perimeter alarms and motion detection sensors be integrated under a single software management platform.

“The development of intelligent video software (IVS) in the full live analysis or subsequent review of images relating to any particular incident or event has figured significantly in raising levels of control or prevention.” Dr Coetzer adds that IVS enables automated image sensors to deliver, among others, facial recognition, number plate recognition and smoke fire and motion (running, brawling) detection. It also enables accurate calculations of speed and distance from images recorded at different camera locations.

“These are all capabilities that can assist authorities with the successful prosecution and conviction of criminals and other offenders as well as in the development of more effective overall incident management.”

Tight integration into a single User Management Platform brings together all of the available sensors and presents them in a fashion that fully supports proactive combating, control and management of any incident or potential incident. This is supported by high quality video displays, high resolution graphics and sufficient logic within the system to enhance and improve overall levels of security and management.

“What is required does not stem from the expansion of Building Management or Access Control systems. A fully integrated network centric surveillance system is required – one that facilitates security across the enterprise and is designed to present accurate, timely and high quality visual information to operators, allowing them to activate a series of set procedures to deal with any given situation,” says Dr Coetzer.

Protoclea’s ARGUS platform offers security personnel a unified front end that sees and controls all of their systems from a single screen. It fully integrates DVRs, access control, perimeter alarm systems, fire systems and other components. Operators see a single system even in applications where more than 800 cameras are implemented.

Dr Coetzer says this constitutes a system that offers real time recognition of threats, immediate situation analysis and networked collaboration and response co-ordination.

Typically such integrated systems are ideal for event and incident management in not only airports and railway stations but also entertainment complexes and other public facilities, shopping centres, control rooms (both joint and specific) and for street surveillance.

The ARGUS offers a comprehensive visual view of the entire area of surveillance interest and has the capability to zoom into any area at a mouse click. Operators are presented with a multi-screen view of the incident to ensure that all aspects of security can be carefully considered. This visual view is also enhanced by the addition of terrain/layout views that indicate the positioning of cameras, resources, fire doors and exits, staircases, elevators escalators and other key points.

The ARGUS platform provides the full integration required by the control room, allowing digital and analogue video recorders, access control, perimeter alarm systems, fire systems and many others to be combined into a single, effective security solution.

Observers watching the system monitors are presented with active scenes in large format and dormant or stationary scenes are presented in a smaller format. Should activity occur in a dormant scene, it will automatically be brought into view in large format. This functionality makes it easy for observers to concentrate on areas where their attention is actually required, and monitoring is therefore less strenuous. A single observer is therefore able to monitor more screens more effectively, reducing overall control rooms running costs.

Alarms are automatically detected and the system includes tools that assist observers to recognise scenarios that would typically lead to an incident. Where incidents are confirmed, a fully automatic reaction activity program can be activated.

Dr Coetzer says an important fact is that, as a full integration tool, ARGUS offers users information from the Access Control system, including door status or access status, fire detection systems and alerts, the status of building facilities such as escalators, air conditioning, sprinkler systems emergency exits and access/egress points such as doors and windows, service hatches and fire escapes

The images are displayed using the most modern very high resolution presentation technology in large video panels/walls that permit a wide range of image display and size of image options.

The capability to immediately review images from video recorders adds to the realism of incident management. Operators are also further prompted by guidance texts in dealing with any incident.

As the ARGUS platform is independent of hardware it remains unencumbered by the limitations that could be posed by any specific hardware. It is designed primarily to function as a security information tool and is structured in a way that it is possible to fully integrate with most systems available today. ARGUS is not limited by image resolution or recording rates and will seamlessly mix analogue and digital products, standard CCTV and High Definition TV of all classes.

“The key to the powerful integration capability of ARGUS is its unique architecture, which uses a standardised command set with product-specific drivers to integrate an extensive variety of OEM products,” says Dr Coetzer.

The front end of the ARGUS system is designed to present security operators with what they need most -- visual images of unfolding events and maps showing actual location as well as direct command and control capability over any developing situation. The hardware and connections are hidden from operators so that a single system is seen, even if there are many different products from different manufacturers, operating within the system.

The ARGUS is also designed to permit the connection of multiple workstations to ensure sufficient human effort can be allocated to events. This distribution capability facility also allows operators to be spatially located in different rooms, buildings or at a remote headquarters many kilometres away.

The event manager system within ARGUS is designed around a powerful script-architecture which allows system designers to define exactly what should happen under whatever circumstance. Procedural steps can be established for dealing with fire, explosion, bomb threat, armed robbery or any other circumstance. The software turns management of the access control, fire, guidance and display systems into an easy task.

ARGUS is equipped with a fully integrated Command and Control system so that it becomes a Command Centre. For example, Dr Coetzer says the system will concentrate on all images relevant to an incident or event in an Airport. The main image could be one showing a group of armed people holding up a foreign exchange outlet and another image may focus on the getaway car.

A further image could contain a map of the Airport layout and street maps of the surrounding area. Likely escape routes can be anticipated and images from cameras at nearby highway onramps could be brought into play. These features allow the operator in charge to effectively deal with all aspects of an incident or event, even to the extent of allowing the “battle zone” to move to a safer area where fewer people are exposed to danger.

This capability extends to communication with external resources such as police and emergency services, as well as customers and members of the public through public address systems to instruct them on which exits to use, where to go and what to do. ARGUS is therefore capable of facilitating complete disaster management.

The Argus system caters for full review and analysis of images relating to any particular incident. It will bring together information from automated image sensors such as facial recognition and number plate recognition as well as enable accurate distance and speed calculations from images recorded at different camera locations. These capabilities assist with prosecution and conviction and in the development of more effective incident management.

Protoclea has already installed a SINON ANPR (automatic number plate recognition) system at the O. R. Tambo International Airport which, by covering parking areas and 44 entry and exit lanes catering for more than 20 000 vehicles a day, has significantly reduced vehicle theft.

Note to Editors: Protoclea (Pty) Ltd, trading as Protoclea Advanced Image Engineering, is a wholly South African company, formed in 1987 and headquartered at Lonehill, Sandton. Protoclea Advanced Image Engineering specialises in image processing, data communications, digital video systems, Intelligent Video Software (IVS) and network-centric surveillance system management platforms and components for defence, commercial security and specialised imaging applications. Protoclea provides system engineering, high-speed digital design, image processing, embedded software design, digital signal processing, and high level software design.

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