

## JVC Kenwood radio tracking and CCTV control system

In 2008 JVC and Kenwood combined under J-K Holdings to create an organisation offering an extensive range of video and voice multiple media products. For the professional business customer this includes JVC Professional products for video surveillance, Kenwood's mobile radio communications and Zetron's control room systems.

Video surveillance and mobile radio communications services are deployed by most organisations with control room operations in transportation, secure institutions, facilities management, town centres, business and industry.



Through the synergy and ongoing integration between JVC Professional and Kenwood, solutions are being developed to realise the customer benefits of integrated solutions. One such solution is the combination of CCTV camera control and video analysis, mobile radio location tracking and radio communications.

The system concept is aimed at institutions and organisations using CCTV surveillance and mobile radio communications and managing these services from a control room.

The principle is that as radio carrying personnel move around the building or site their location is tracked and this information is used to control the CCTV camera images fed to the control room operators desk. In this way the operator can see the radio carrying staff and their local situation without needing to refer to a bank of monitors showing all the CCTV images.

This has particular application in facilities such as prisons, airports, ports and harbours and in industrial facilities where radio carrying staff may be put into hazardous situations. By integrating the radio location with the CCTV feed the operator can be served with the CCTV image of the radio user either at all times the radio user is on site or just when the radio user calls into the control room. In addition to choosing the right camera for the operator, the CCTV camera may also have defined pre-set positions so that if the resolution of the location data is sufficient the camera can pan and zoom to the radio users precise location. If the control room operator can see the radio caller and their circumstances this improves the operators situation awareness and their ability to deal with an incident and to provide support to the radio caller. For example, the operator can effectively perform a virtual tour with a lone guard and accompany them around the facility staying in video and voice contact. This can also help to meet health and safety regulations and the employers duty of care towards their employee.

The choice of radio location tracking can be GPS or beacon based. GPS is suitable for larger sites where the radio user is outdoors and GPS cover is reliable. Inside buildings a beacon based approach is suitable whereby fixed low power radio based beacons are positioned around the building. As the radio user moves around the building or site, the portable radio is registered as being in the proximity of individual fixed beacons and this information is sent to the control room to plot the radio users position.

### System Details:

The system uses fixed low power radio based location beacons from Kenwood partner Schmidt Funktechnik. The Kenwood portable radios are fitted with Schmidt add-on low power transceiver modules. As the Kenwood portable radios move around a site and register on a specific location beacon they transmit a data message to the control centre which contains the identity of the Kenwood radio and the specific beacon identity which defines the radios location. This information is used to define the CCTV camera feed to the control room operators desk. By mapping the beacons location identity to the appropriate CCTV camera the camera feed covering the radio users location is selected and presented to the operator.



The location information is communicated to the control centre over the voice radio channel so the beacons only require local power and do not require their own radio access to the control centre nor to be on a data network

The range of the low power beacons can be adjusted from about 3metres to 60 metres according to the required precision of the location information. Multiple low powered beacons will be used where location information must be precise, for example within individual rooms in a building. A single camera to cover a large area will need less precision than multiple cameras each covering a smaller area.

The location information for each portable radio may also be shown on a facility plan or building layout display at the operators desk to represent the position of each radio.

The Kenwood portable radios can be used for normal voice and data services as well as providing the tracking information.

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### About JVC Professional Europe Ltd.

JVC Professional Europe Ltd. is a wholly owned subsidiary of Victor Company of Japan, one of the world's leading manufacturers and suppliers of a wide range of sophisticated high quality broadcast, professional, recording, playback and presentation equipment. JVC also manufactures computer imaging, internet communications, data storage and CCTV solutions. The company is committed to providing video and data-related solutions and service to customers in Europe, the Middle East and Africa.