RUNWAY SAFETY AREA MONITORING SYSTEM

The RSAMS monitors the target movements (aircrafts and vehicles) on the RW/TW intersection in order to detect:

- Runway incursions (i.e. unauthorized runway entries);

- maneuvering errors (i.e. unauthorized exits from RWY).

RSAMS uses double microwaves sensors that consist in a Transmitter (TX) and a Receiver (RX), both installed close to the holding point of the RW/TW intersection.

The monitoring of targets is also extended to vehicles that move on the peripheral roads that enter directly the runways. In this case the double microwaves sensors are located near the marker of holding position of the roads. The system controls traffic vehicle with proper traffic lights to prevent possible errors of the drivers.

The communication between the sensors and the processing units in the control tower is made through an fiber optic communication ring or a UHF radio channel.
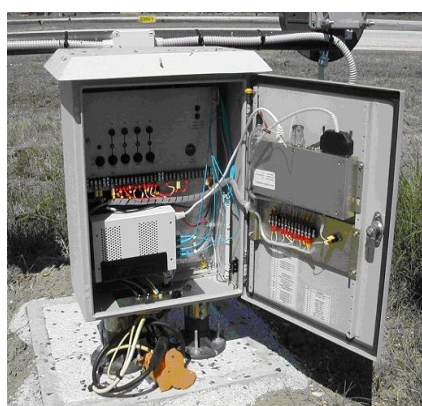
The TX/RX couples and the traffic lights can be powered by a dedicated primary circuit and CCR or by an existing AGL circuit. To guarantee the correct operation of sensors even in case of absence of the primary power (in case of failure or in presence of maintenance activities), a local backup battery system is available. In this case, each unit is fed by its battery, for at least 24 hours. The batteries will be recharged by the restart of the primary circuit, through the built in battery charger.

To simplify the Ground Controller clearance to enter the Runway, the system is provided with a portable keyboard, called RSAMS remote control, composed by functional buttons, each associated to a protected intersection. In this way the authorization to enter the Runway will be sent selecting the button referred to the associated intersection.

Each violation is notified to the Ground Controller through an acoustic alarm and appropriate visual signals displayed on the RSAMS HMI in TWR.

Moreover each event notified by the system is logged on the system database, for further analysis.

The RSAMS system may be integrated with the stop bar system. In this case according to the target position, RSAMS will switch on/off the stop-bar and lead-on in case of authorized entry.