

# Army solution with JCATS

## IRAS Army solution

### IRAS for the Danish Army with JCATS

The Danish Army's tactical simulation center houses more than 100 JCATS clients and number of supporting systems all running the IRAS software. The IRAS system on the JCATS PCs is controlled with a special hardware switch box resembling a Terma RT7/PRC2061 radio to which military handmike, speakers and headsets are connected. To further enhance the simulation experience up to twenty real live radios can be attached to the simulation network via dedicated PCs running the IRAS software. Finally, for the daily management of the IRAS system to centralized IRAS servers are set up for application and configuration deployment.

The IRAS Army solution is a customized version of IRAS Basic and has been in deployment since 2011. On the JCATS PCs the IRAS system is running together with the JCATS software and to not interfere with the JCATS user interface IRAS is controlled by an external switch box. On other PCs the standard communication panel is used. The integration of real radios with the simulation communication network makes it possible to enhance the simulation to the outside areas of the simulation center effectively integrating personnel equipped with real radios and operational level vehicles into the simulation exercise.

### Controlling IRAS with dedicated hardware

The purpose of dedicating a hardware box for the operation of IRAS is two-fold: It does neither require a screen nor keyboard and mouse and it makes it possible to connect non standard PC equipment with military connectors to the PC. Actually two hardware switch boxes of this kind are attached to one JCATS PC. This makes it possible for two simultaneous and independent communications. The switchboxes are connected to the PC with serial port and audio cables. From the switchbox the operator can select one of ten predefined channel for communication.



The setup for the switchboxes is done in the IRASInstructor application.

### Integrating real radios in the simulation

The setup for the real radio integration consists of four (4) rack-mounted PCs with the IRAS system in a special configuration. Each PC has been equipped with three (3) sound cards and five (5) serial ports. For this specific set up with 20 live radios there are four (4) PCs each connected to five (5) real radios via the line in/out left and right channels on each sound card. Each radio will be assigned a specific frequency in the simulation (software radio) as well on air (real radio). When a transmission takes place in the simulation which matches the frequency for the software radio the Push-to-Talk for the real radio is enabled and the audio of the transmission is transferred to the mike input of the real radio. And the other way round - when the real radio receives a transmission on air the PTT for the software radio in the simulation will be enabled and the audio from the real radio will be transferred to the line in on the sound card and further across the simulation network.



To allow for the bi-directional PTT a special hardware box was developed and inserted between the sound card on the PC and the real radio.

## **Enterprise level deployment**

With a setup consisting of more than 100 PCs you probably would prefer not to attend each single PC for each single software update. As an extension to the IRAS system a dedicated redundant IRAS server pair that serves as both deployment and configuration servers was set up. You install the IRAS software on the servers only and on the clients a small starter software that downloads the IRAS software from the server when required, that is, either first time the program is started or when an update is available. The servers also host all configuration settings for all communication clients in the simulation center.

## **Other features**

The redundant server pair both serves as hot-spare servers where both servers run at the same time and update both the software and the settings between them at run-time and as load balancing servers that ensure fast startups for the clients. Furthermore the redundant servers also serve as redundant license servers for the IRAS software.