

SMART RESPONSIVE JAMMING GOES COMINT

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1. INTRODUCTION

Current and future operational theaters include assignments which are out of area and often require fast deployment of small contingents in asymmetric scenarios.

Protection of these contingents against RCIED threats is necessary and therefore requires integration of RCIED protection systems into the deployed platforms. Even if platform users dislike the additional space and weight consuming equipment, it is vital and as important as platform armor.

2. SMART JAMMING TECHNOLOGY AND PRODUCTS

The optimal way to defeat RCIED attacks is to combine barrage jamming with the more refined responsive jamming as with SMART Responsive Jammers of Airbus Defence and Space (former Cassidian). They combine the advantages of both techniques into one highly effective and efficient jamming system. This allows SMART Responsive Jammers of Airbus Defence and Space to autonomously respond to all kinds of signal scenarios in an appropriate and most effective way.

Airbus Defence and Space SMART Responsive Jammers combine **advanced receiver and exciter technology (REU)** with a set of power amplifiers into compact jamming systems. One main application for this is military vehicle protection. The compact size and

modest primary power requirements allow the easy integration into all kinds of vehicles. However the deployment of technology used by Airbus Defence and Space not only provides improved protection against RCIEDs but also offers the capability to perform signal reconnaissance.

3. DISTRIBUTED MOBILE SENSOR PLATFORMS

Typically, the inherent receiving capability of responsive RCIED jamming equipment is available in many platforms in the theater and can be used in the following contexts:

1. Exclusive usage of VPJ capabilities for threat analysis in the scope of RCIED duties.
2. Additional usage of VPJ capabilities for Communication Intelligence in the scope of CISM duties.
3. Usage and extension of the capabilities of the VPJ for Communication Intelligence in the scope of CISM duties.

3.1 INTEGRATED SPECTRUM RECORDING

Due to the integrated receiver in SMART Responsive Jamming systems of Airbus Defence and Space, it can be used for reconnaissance missions.

While still allowing to be protected by RCIED jamming, the jammer systems are capable of

recording the complete observed spectrum in parallel for later analysis.

Furthermore, the time and platform location information is recorded.

No additional equipment is required for this as recording, clock and GPS functions are available in the used computer hardware.

3.2 POWERFUL OFFLINE DATA ANALYSIS OF SPECTRUM RECORDINGS

The mission recordings including collected spectrum, time and position data are valuable for different purposes:

- **Mission Debriefing:** in order to consider the background and threat scenario activities during the mission.
- **Hotspot Analysis:** the spectrum data recorded along the driven route is analyzed and compared to the jamming capability in order to find out if RCIED protection is effective e.g. also in the vicinity of strong public communication emitters.

3.3 SPECTRUM RECORDING FOR RCIED JAMMING EFFECTIVENESS IMPROVEMENT

Information about the radio links used by the opponent to trigger RCIEDs can be used to significantly improve the efficiency of RCIED Jammers. Due to the fact that after successfully avoided attacks the opponent might change

Protection Jamming Technologies

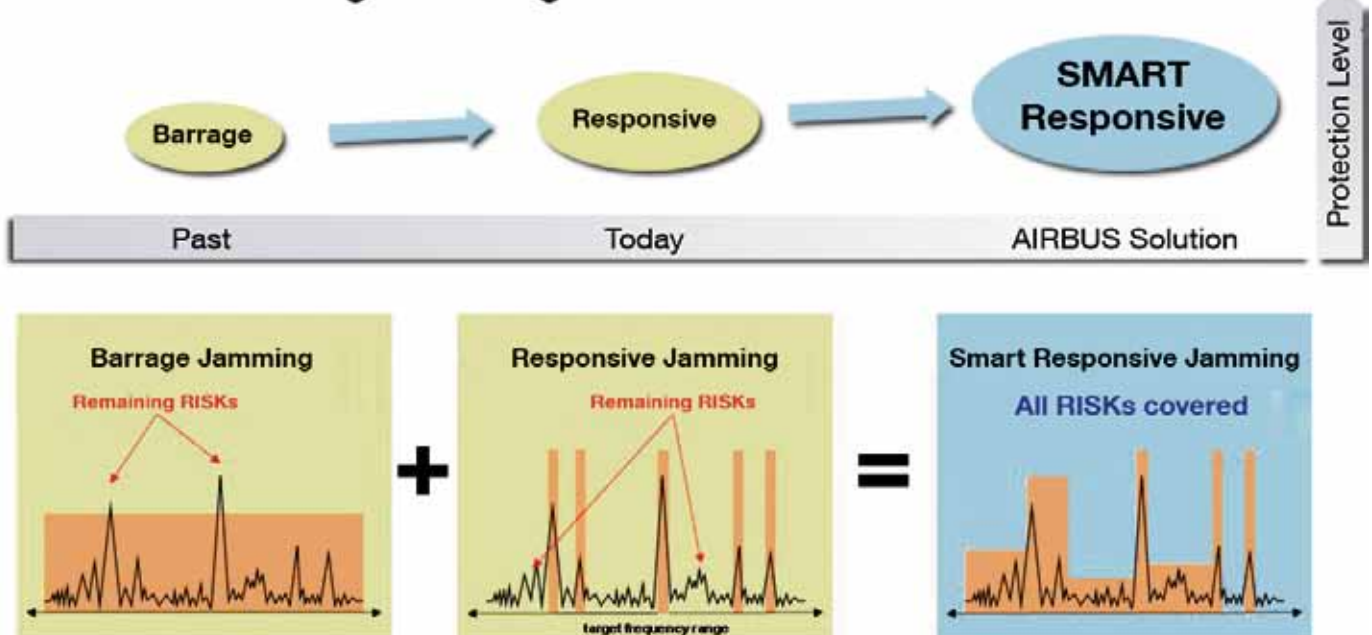


Figure 1: Jamming techniques, SMART jamming

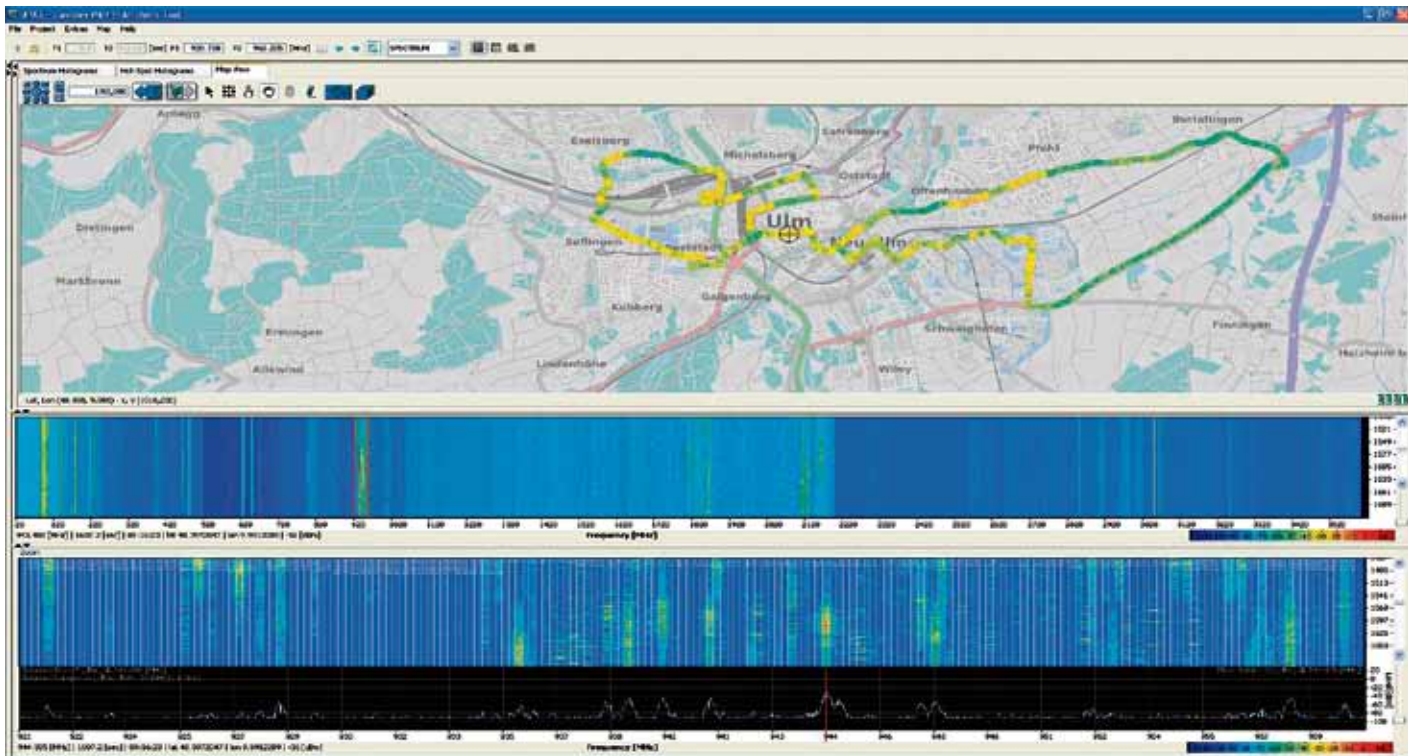


Figure 2: Jammer Plot and Analysis Tool JPAT of Airbus Defence and Space performs Hotspot Analysis based on Mission Recordings.

radio links to trigger RCIEDs, a continuous analysis of the threats and the adaptation of suitable counter measures are necessary.

4. CESH CAPABILITIES

In case the platform is in a safe place and RCIED protection is not required, the equipment is available for full-time CESH usage. Through minor HW extension of the VPJ equipment set, e.g. by a Laptop and a military computer (see Figure 3), interactive and fully automated COMINT functionality becomes available. Hereby SW packages are used like e.g. the MRSI2000 and the MRSI8ACP and combined MMIs for tasking and result display which capitalize on COMINT activities of Airbus Defence and Space during the past 15 years. This package of computer HW and SW is called SMARTscout.

Interactive COMINT: During interactive COMINT operation, the operator gathers the information by searching and analyzing signals using interactive SW tools on the laptop, initiating the workflows step by step.

Automated COMINT: During automated COMINT operation, the operator concentrates on tasking and evaluation of the data which is gathered by the system in a highly automated workflow. A high degree of automation is required for the performance of the tasks described below in order to process a huge amount of data deliver critical information in real-time perform the task with only few specialists

5. CONCLUSION

The SMARTscout system approach allows a

simple extension of existing RCIED protection systems to offer a large increase in capabilities including the possibility to use small, lightweight and air transportable platforms as

they are required for fast deployment of small contingents in out of area missions.
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Figure 3: Vehicle Protection Jammer equipment and SMARTscout extension