

Remote Spectrum Surveillance and Monitoring (RSSM)

Kestrel TSCM[®] Professional Software

January 2016

Technical Research and Standards Group (TRSG)

Paul D Turner, TSS TSI

There are many aspects of a successful Technical Surveillance Countermeasures (TSCM) assignment, or operational deployment that must be considered before the RF Spectrum Analysis phase of the assignment is undertaken in practice.

As noted in the December 2015 newsletter.

“The industry pretenders simply look for something to repackage that looks good, often for the client’s approval, and to justify the fee charged, making it entirely, all about the money. The true industry professionals deploy TSCM equipment resources and software in a manner that maximizes the Probability of Detection (POD), and are not simply focused on “looking good” for the client”.

Many potential client’s do not fully understand the vast capabilities and limitations of a Technical Security (TSEC) program, and often rely on what they see on websites or are told by someone.

Let me make it perfectly clear, if you are deploying RF Spectrum Analysis tools only for the duration of a short on-site inspection, you are failing to provide an adequate level of professional service for the client!

Such inspections are fast becoming obsolete, given the realities and complexity of modern RF based (friendly and hostile) technologies that may be deployed at the will of an attacker, without giving any consideration to your limited “snap-shot” style inspection of the ambient RF spectrum environment.

It is now an essential practice to deploy Remote Spectrum Surveillance and Monitoring (RSSM), to ensure that the RF spectrum is clear, not only for a few hours during the inspection, but on a programmed (24 / 7) basis, and designed to capture potentially hostile signal events that may occur at any time of the day or night.

It is also possible that unauthorized friendly (potentially hostile) signal events may occur and be captured as part of a targeted RSSM deployment of this nature.

Typically such incidents are becoming more and more frequent, and unfortunately will remain undetected or identified without the aid of Remote Spectrum Surveillance and Monitoring (RSSM).

The Kestrel TSCM[®] Professional Software was designed with this new “methodology” in mind, bringing low cost Multiple Receiver Operation (MRO) to the industry for the first time, extending the capabilities and minimizing the limitations during active deployment.

RSSM | Probability Of Intercept (POI)

When the technical operator deploys RSSM, the result is a significant increase in the Probability of Intercept (POI) and Probability of Detection (POD), over a given period of “time-on-target”.

The search receiver, regardless of sweep speed and other factors, is not capable of capturing every signal event, during every sweep.

The receiver may be sweeping somewhere else when a hostile signal event occurs, not capturing every event instance, or the hostile event may be masked by another friendly event of the same frequency.

Simply, speaking, no recorded event, no opportunity to identify or analyze the signal, as potentially hostile.

RSSM changes the game in a number of ways, as it is possible to deploy multiple receivers at the same, or different locations, increasing the amount of spectrum data collected for analysis by the technical operator.

The collection process is “continuous” and therefore, will capture all signal events over a given period of time, but not necessarily capturing “all” instances of a particular Signal of Interest (SOI).

Multiple receivers allow the targeting of multiple full ROI or specific sub-band allocations, and therefore the Probability of Intercept (POI) is significantly improved as is the Probability of Detection (POD), in unattended “automated” runtime collection, and during post event analysis and review, by the technical operator.

Kestrel TSCM[®] Professional Software

We Are Future Ready—Are You?

Professional Development TSCM Group Inc.

Illusive Wireless Technology

The intensity of the wireless industry focus on using new and existing spectrum allocations, is fast becoming an impossibility, as to understanding how all the various communications standards, modulation and integration scheme operate.

With current wireless technology “hand-off” to random channels and spectrum band allocations, the use of smart technologies that evade “in-use” channels to prevent interference, it is considered an essential practice to capture a wide Range of Interest (ROI), so that the “hand-off” process might be followed during playback analysis, to provide a better picture of any given signal event.

Software Defined Radio (SDR) | Future Ready!

The many SDR hardware options that have entered the market during the past 5 years, are advancing new industry wide opportunities, in Remote Spectrum Surveillance and Monitoring (RSSM).

High performance, low cost SDR hardware was the single missing component in a technologically stagnate TSCM industry, which has seen significant changes in the type and sophistication of RF based Technical Surveillance Devices (TSD), all in a relatively short period of time worldwide.

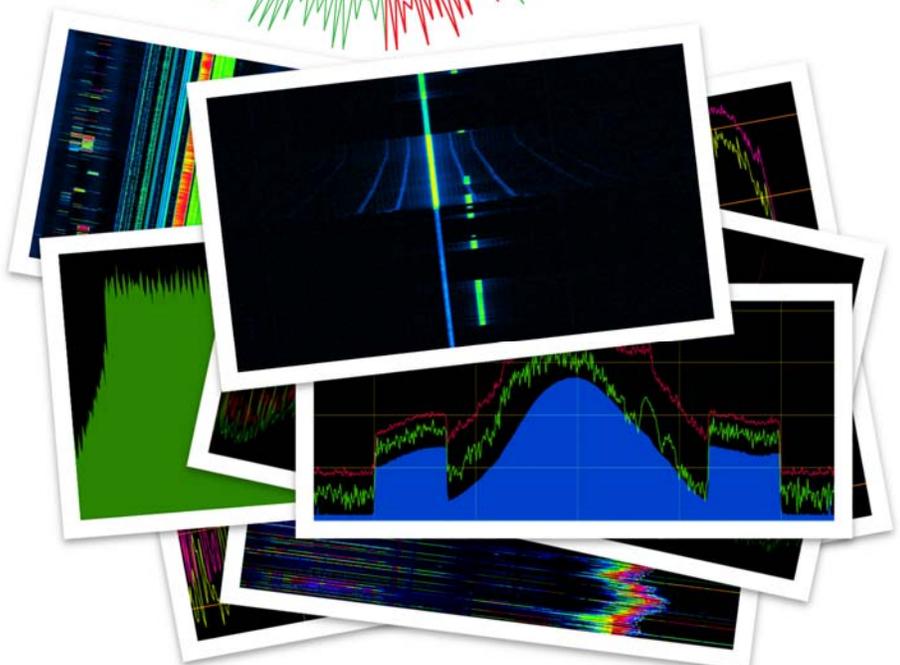
The Technical Security (TSEC) industry has been slow to respond and embrace new technology and perhaps more importantly, new deployment “methodology”, in keeping with the flood of new wireless smart technologies that are capable of altering the modulation scheme, spanning wide bandwidths, hopping multiple bands, and by diversity (adapting) to the local ambient RF spectrum environment, making many of the past deployment techniques less relevant with each passing day.

The key to the future of RF Spectrum Analysis in a Technical Surveillance Countermeasures (TSCM) role is the versatility of Software Defined Radio (SDR)!

For additional information about the Kestrel TSCM[®] Professional Software, Technical Security Specialist (TSS) training and certification programs, professional services, or the Canadian Technical Security Conference (CTSC), please visit;

| www.pdtg.ca | www.kestreltscm.com | www.ctsc-canada.com |

Innovation is Simply the Beginning



Kestrel TSCM[®] Professional Software is innovative industry leading, disruptive technology, now sold in 23 countries worldwide.