

# Kestrel TSCM<sup>®</sup> Professional Software

## Red Deer Training Centre (RDTC) | Alberta Canada

July 2017

Technical Research and Standards Group (TRSG)

### Paul D Turner, TSS TSI

Professional Development TSCM Group Inc., is pleased to announce the official commissioning of our new **Red Deer Training Centre (RDTC)**, located in the heart of Alberta Canada, on a scenic 160 acre site.

Our Technical Security Specialist (TSS) designate certification, and other related training programs will continue to be available at our long-standing **Resident Training Centre (RTC)**, located in Cornwall Ontario.

Our new facility is equipped with a shielded RF and software development lab, an on-site classroom for dedicated law-enforcement, government security apparatus, and military participants.

Advanced technical operator training and certification for the Kestrel TSCM<sup>®</sup> Professional Software, and our Technical Analyst Certification (TAC) program, are now conducted at our secure Alberta facility.

As noted in the June 2017 newsletter.

*“There many aspects of applied signal level analytics that must be explored in the execution of TSCM and RSSM<sup>™</sup> deployment. Many of the so-called signal level parameters are totally irrelevant, in actually determining whether or not, the observed Signal of Interest (SOI) is of any real significance.*

*The primary concern is not the intelligence that the signal may, or may not contain, but rather, it is the outward signal level characteristics that provide the initial analytical data that defines the SOI as a potential threat”.*

There are a number of key analytical factors that must be considered and evaluated, in real-time, and during post analytical capture of a Signal of Interest (SOI).

It is not possible to make an informed decision as to the nature of any particular signal event, if first the signal is not detected and identified, by the technical operator.

Many hostile signal events, by design, employ any number of methods and techniques to minimize visibility of the RF signature to an unexperienced, or unmotivated technical operator.

Once a Signal of Interest (SOI) is detected, it must be identified by the technical operator as a potential threat. This is not always an easy task, unless the signal is of a continuous nature. Periodic bursts that present over a potentially infinite period of time, require a detailed technical analysis of the spectrum. Again, unless all the spectrum data is captured and is available for post analysis, the positive identification of a threat by the technical operator, will not occur.

The minimum recommended analytical best practice, as defined by the TSB 2000 (Technical) Standard<sup>™</sup>, includes a technical operator analysis of the Waterfall Display (WFD) and spectrum data, for the preceding 24 to 72 hours, utilizing Time Differential Signal Analysis (TDSA)<sup>™</sup> across a maximum time block reference of 4 to 6 hours, spanning the number of collection days available.

However, operator discretion in determining the best time block reference time, might suggest a 2 to 4 hour TDSA<sup>™</sup> comparative, based on the perceived real-world threat level encountered.

To illustrate the depth and complexity, consider a Technical Surveillance Device (TSD) that produces a 250 mSec burst once every 4 hours in a standby mode, and produces a 500 mSec to 750 mSec burst, once every 30 minutes when active.

At 250 mSec, the Probability of Intercept (POI) will be problematic on a slower receiver, for example the Signal Hound BB60C, as the receiver sweeps at 250 mSec or 4 fps, meaning there is a 1 in 4 chance the burst will be detected when it occurs.

The POI is significantly enhanced when the system is deployed for a period of 24 hours or longer, as there will be a greater number of opportunities for detection of the burst event, with time being an important variable.

The technical operator must always remember that it is not likely all events will be captured, so the picture may not be complete. This is why, the technical operator is an essential component, within the signal analysis process.

# Kestrel TSCM<sup>®</sup> Professional Software

## “Professional Software for Professional Applications”

Professional Development TSCM Group Inc.

Technical Security Branch (TSB)

The technical operator can observe, identify, and interpolate signal event patterns accurately, utilizing TDSA<sup>™</sup> profiling. Our powerful TDSA<sup>™</sup> feature, and soon to be released, advanced TDSA<sup>™</sup> filtering capability, are modern analytical techniques.

### Live View Analysis (LVA)<sup>™</sup>

There are a number of powerful tools available to the technical operator, to facilitate analytical profiling of captured spectrum data. LVA<sup>™</sup> permits the operator to view real-time historical waterfall and spectrum data without the interruption of the runtime capture process.

LVA<sup>™</sup> can be utilized during runtime, to navigate back in time, to review recent spectral events, without interrupting runtime collection, and during post analysis and review of historical Kestrel Project Files (KPF).

### File Write Management | Waterfall Compression<sup>™</sup>

The ability to define a write compression value has numerous advantages, aside from the obvious reduction in the size of the Kestrel Project File (KPF) footprint from a storage perspective.

Defining the number of real-time traces that are included within a single Kestrel Super Trace (KST), means on a magnitude of  $< 1/n=? >$ , defined value, significantly less waterfall and spectra data needs to be visually analyzed, by the technical operator, and reduces the block memory footprint, while advancing operator efficiency.

Essentially, for the operator, this means there is a magnitude of less data to analyze, without compromise of data integrity.

Runtime collection is now measured in weeks and months, rather than minutes and hours, as is typical within, a now obsolete snap-shot style sweep environment, replaced by a moving target threat model, requiring a high-definition panoramic spectrum collection on a 24 / 7 / 365 basis.

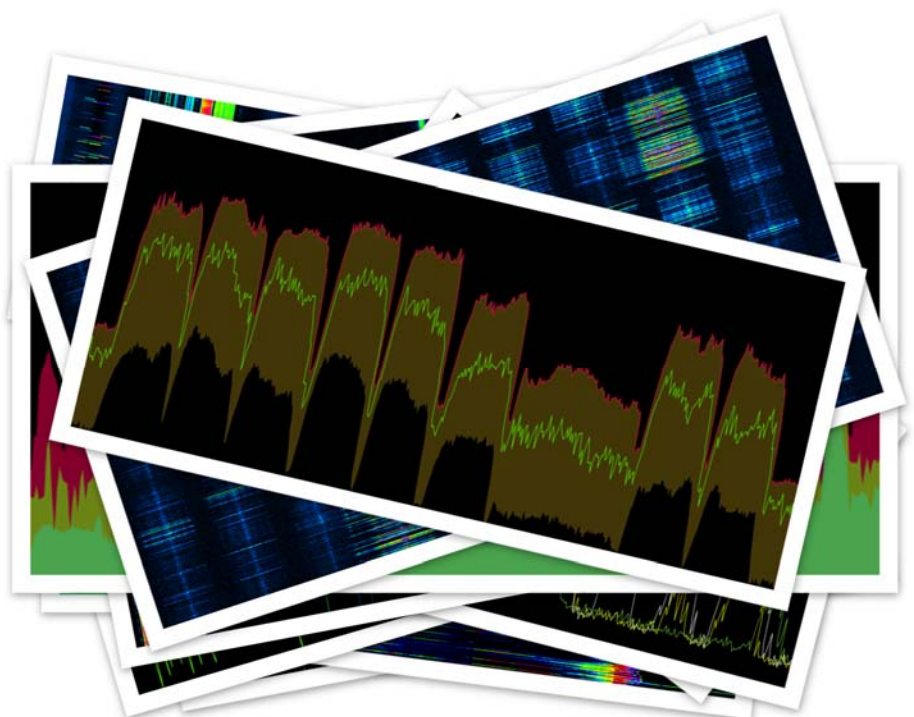
The ability to focus operator attention on any signal event, is made possible with a powerful continuous Positional Zoom Control (PZC) feature, and a high-precision, Horizontal Range Control (HRC).

Spectrum display and activity controls, provide a means to view all aspects of the waterfall and spectrum display, during runtime and post analysis.



To learn more about developing an effective Technical Security (TSEC) program, or seek information about training and certification opportunities, please contact [Paul D Turner](#), TSS TSI

| [www.pdtg.ca](http://www.pdtg.ca) | [www.kestreлтscm.com](http://www.kestreлтscm.com) | [www.ctsc-canada.com](http://www.ctsc-canada.com) |



**Kestrel TSCM<sup>®</sup> Professional Software is innovative industry leading, disruptive technology, now sold in 29 countries worldwide.**