DATA RECORDING AND EDM POST-ANALYZER – THE THINKING MAN’S ALTERNATIVE
CI offers EDM Post-Analyzer software, a powerful adjunct to your Spider-based analysis tool kit, allowing you to analyze recordings made using your Spider front-end modules. The beauty of this approach is that it lets you analyze and reanalyze digitally recorded data after the recording event. “But wait,” you say. “Isn’t that the way we used to work when we had to lug 75 pound FM recorders around?” The answer is yes and no.

Yes, in that the recording is made before analysis methods and details must be fully decided upon. No because the recorded data may include things the FM recorder could never capture, is database-filed and SQL searchable, can be initiated from a remote site via internet, has dynamic range and frequency span unheard of when analog tape was king and is fully compatible with all of your EDM analysis software.

Recording first and analyzing second makes great sense to first-responding problem solvers. Simply recording does not require all of the tactical measurement decisions be made before data is taken. Often a new problem requires some “get acquainted” measurements to really define the difficulty and its root cause. We are often not smart enough to guess what causes our new challenge. We need to look at some representative measurements from different analytic viewpoints to begin to understand the problem and home in on its solution. The approach is eminently suitable for a team effort. A recording technician can acquire data using minimum equipment while the analyst can remain on post with his analytic workstation.

Consider a typical scenario. Your NVH team is part of a broader coalition of engineers evaluating a prototype SUV as its release time draws near. Several drivers have reported annoying “boom periods” during their durability loops. You grab a recorder-programmed Spider-80x, some microphones and cables and head to the track. A small DC-DC converter lets you power the small 1.3 kg 8-channel /2-tachometer Spider module from vehicle power (a mere 10 Watt draw). You have enough channels to measure a microphone at every seating position plus a couple of accelerometers or conditioned chassis strain gages. Having two dedicated tachometer channels let you monitor both engine RPM and drive shaft RPM, a real boon in this age of automatic and continuously variable transmissions (CVT)!

Spider-80X is a very capable recorder. It has 4 GByte of on-board flash memory, enough to store more than ¼ hour at a blazing 102.4 kHz sample rate for all 8 inputs and both tachs. Reduce the sample rate on the input channels and recording time increases proportionately (while the pulse tachometers are still sampled at maximum resolution). Its inputs span ±20 Volts with an unrivaled 150 dB dynamic range provided by dual 24-bit ADCs and our patented stitching algorithm, so there is no need to fiddle with input attenuator settings. All data is recorded in 32-bit single-precision floating-point format (per IEEE 754-2008). Recording may be controlled using the front panel Start and Stop buttons, or you can use your iPad® tablet running our EDM App for iPad.

Your recordings can find their way to “analysis central” by any means ranging from sneaker-net to internet. Now EDM Post-Analyzer can go to work for you, using any and all of the DSA analysis tools available for live data analysis. The data streams recorded can be analyzed and reanalyzed in any manner you choose. If you wish to examine the full recorded bandwidth – no problem!

If you want to analyze a smaller bandwidth, or zoom into a far narrower frequency span – no problem – the necessary anti-aliasing filtration and data down-sampling occur automatically when you select an analysis bandwidth. Use FFT and spectrum averaging, employ nth-Octave analysis. Order-normalize your measurements based on either recorded tachometer. Recursively conjure those “what if” scenarios and make the appropriate measurements to prove or disprove each hypothesis. Do all of the proper “detective work” you would do if you were on-station with an analyzer and had the prototype exclusively available to you. But do all of these things in the comfort of your lab without having to acquire additional field measurements while other test occupy the prototype hardware.

EDM Post Analyzer offers a new way to focus your intellect upon the problems of your enterprise. Now you can exhaustively reanalyze recorded questions as you learn from one analysis and formulate the next. Try this thinking man’s alternative – you’re sure to like it. It was designed to support and augment your natural curiosity and intuition when confronting a new problem. Think of it as a structural detective’s newest best friend.