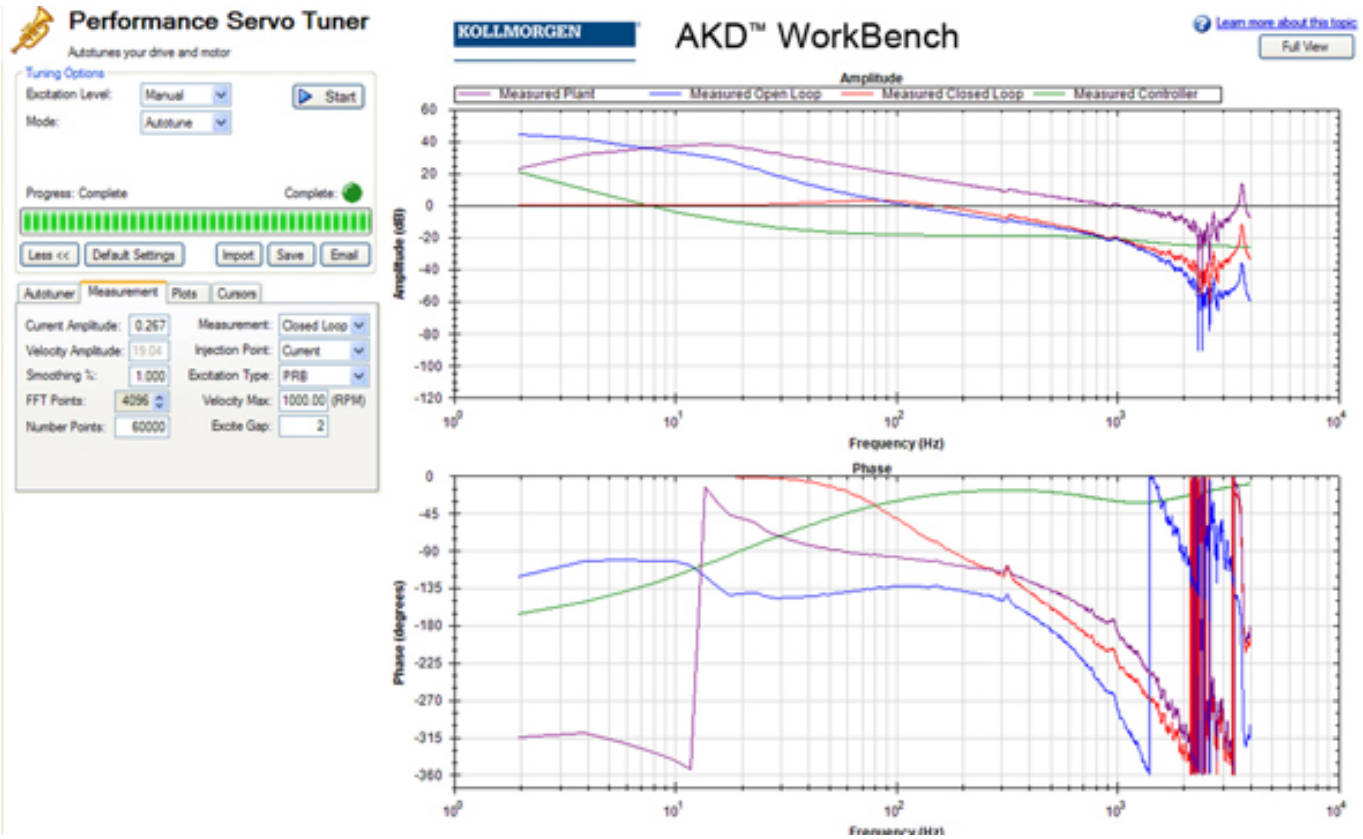
New Graphical Tools Significantly Simplify Servo Drive Setup and Optimization

Josh Inman, Product Manager, Kollmorgen, www.kollmorgen.com

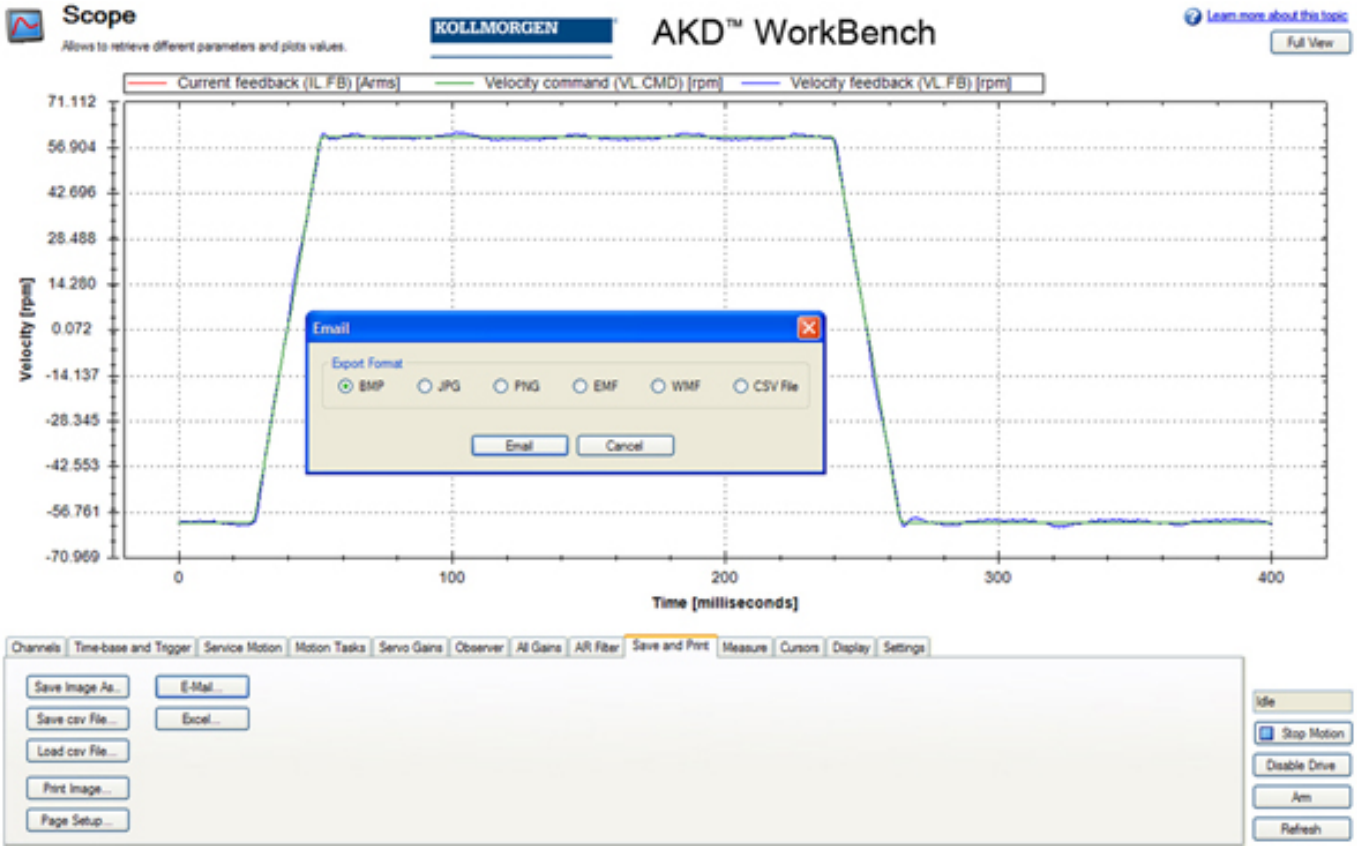
Original equipment manufacturers (OEMs) face continual demands to bring new products to market with higher levels of performance in time to meet shrinking market windows. In many cases, motion is the key to differentiating the machine and delivering a marketplace advantage. Perfectly deployed machine motion provides endless opportunities for innovation and can make a machine more reliable and efficient, while enhancing accuracy and improving operator safety.

Servo drive developers such as Kollmorgen are helping to address this challenge by delivering intuitive graphical tools that simplify the process of optimizing servo drive performance. One of the most powerful is the enhanced auto-tuner that provides higher levels of optimization. The previous generation auto-tuner was limited to checking the inertia of the load and setting appropriate gains. The new generation goes much further by additionally evaluating the compliance of the load. The auto-tuner runs tens of thousands of simulations in a minute with the push of a single button, and makes adjustments to stabilize the motion of compliant loads.



Oscilloscopes have long been part of the servo drive GUI (graphical user interface), but the latest generation of tools substantially increases their capabilities. Scopes are used for setup and troubleshooting to ensure that the motion system's actual performance is meeting the expected performance. Users can set triggers and adjust gains and filters directly from the scope screen. So, for example, if the user sees on the screen that they have too much overshoot, they can slow the acceleration rate and view the results in real-time from the same page in the user interface. Users can also compare their real-time values for any desired parameter to their expected values on the same channel to highlight any deviations.

The latest scopes provide a comfortable environment where users can do anything from easily plotting any parameter in the drive to formatting the color of each curve to things as sophisticated as applying servo filters to their system. Once the user gets everything set up and starts capturing data, it's easy to save and print the information. Users can save the screen as an image, print it, email it or load it into Microsoft Excel with a click of a button. So, for example, if the user spots a problem on the scope and isn't sure how to correct it, with the click of a mouse he or she can email the scope plot to technical support to get another set of eyes working on the issue. This is very different from the days when faxes or screenshots had to be used to communicate the situation.



Plug-and-play motor setup is another user friendly capability that simplifies servo drive interaction. The drive automatically recognizes the motor and uploads the complete motor setup information without user intervention. This feature saves time by eliminating the need to populate motor parameters while also eliminating the risk of manually keying such parameters incorrectly. Similarly drive parameters can be easily loaded from or to a file or reset to factory defaults at the click of a button. These drive parameters can be manipulated and shared very easily via the navigation and

editing environments provided.

While nearly all servo drive manufacturers are competing on some detail around performance, one of the things that matters most to the user is programming simplicity and experience. The graphical tools available with today's newer servo drives, such as AKD WorkBench available with Kollmorgen's Ethernet-based AKD servo drives, provide a user-friendly, pain-free means of helping OEMs bring higher performance machines to market in less time.

Source URL (retrieved on *12/19/2013 - 12:58pm*):
http://www.ecnmag.com/articles/2011/02/new-graphical-tools-significantly-simplify-servo-drive-setup-and-optimization