Using MATLAB® for Data Acquisition, Instrument Control, and Data Analysis

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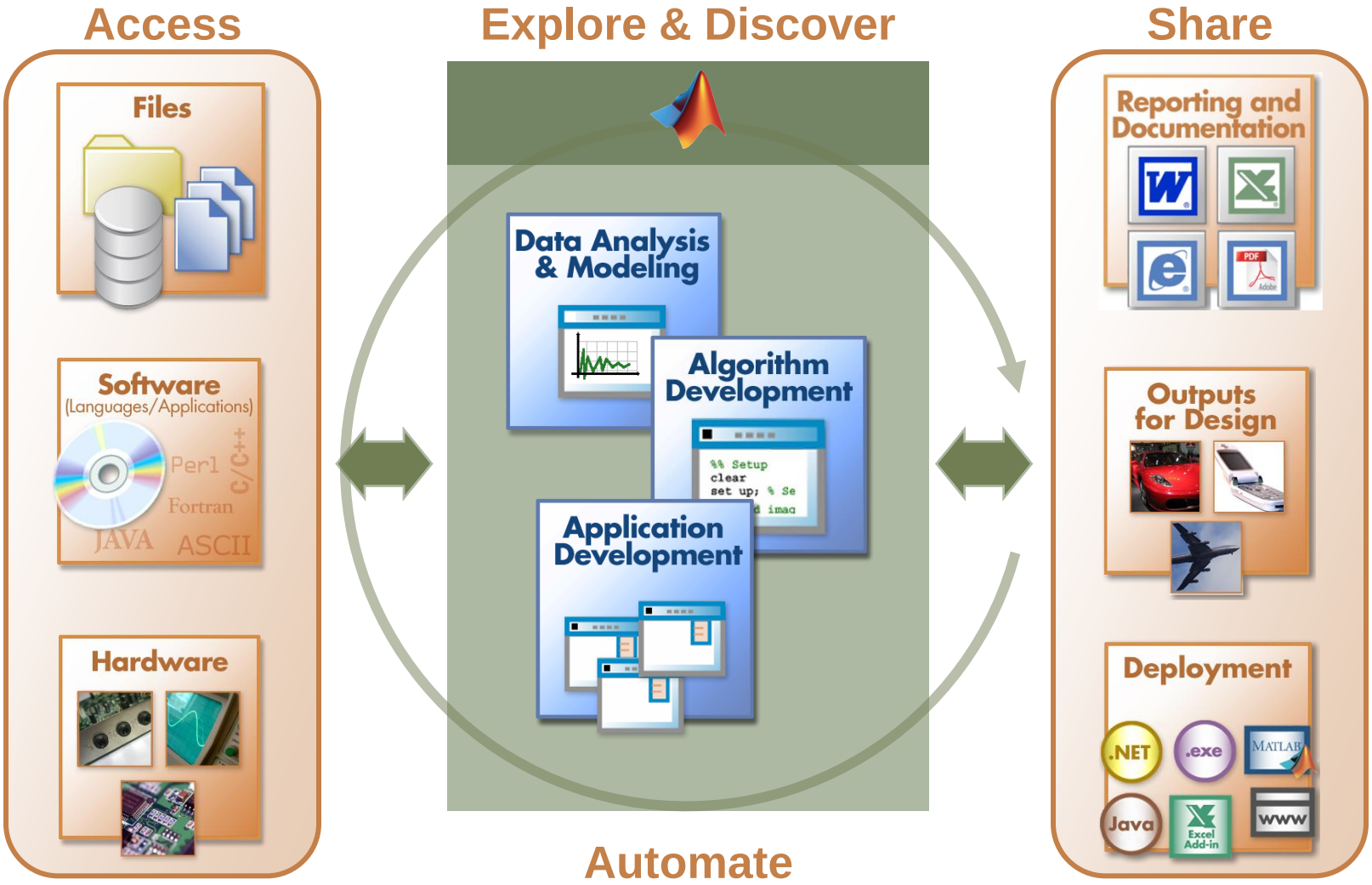
Isaac Noh
Application Engineer

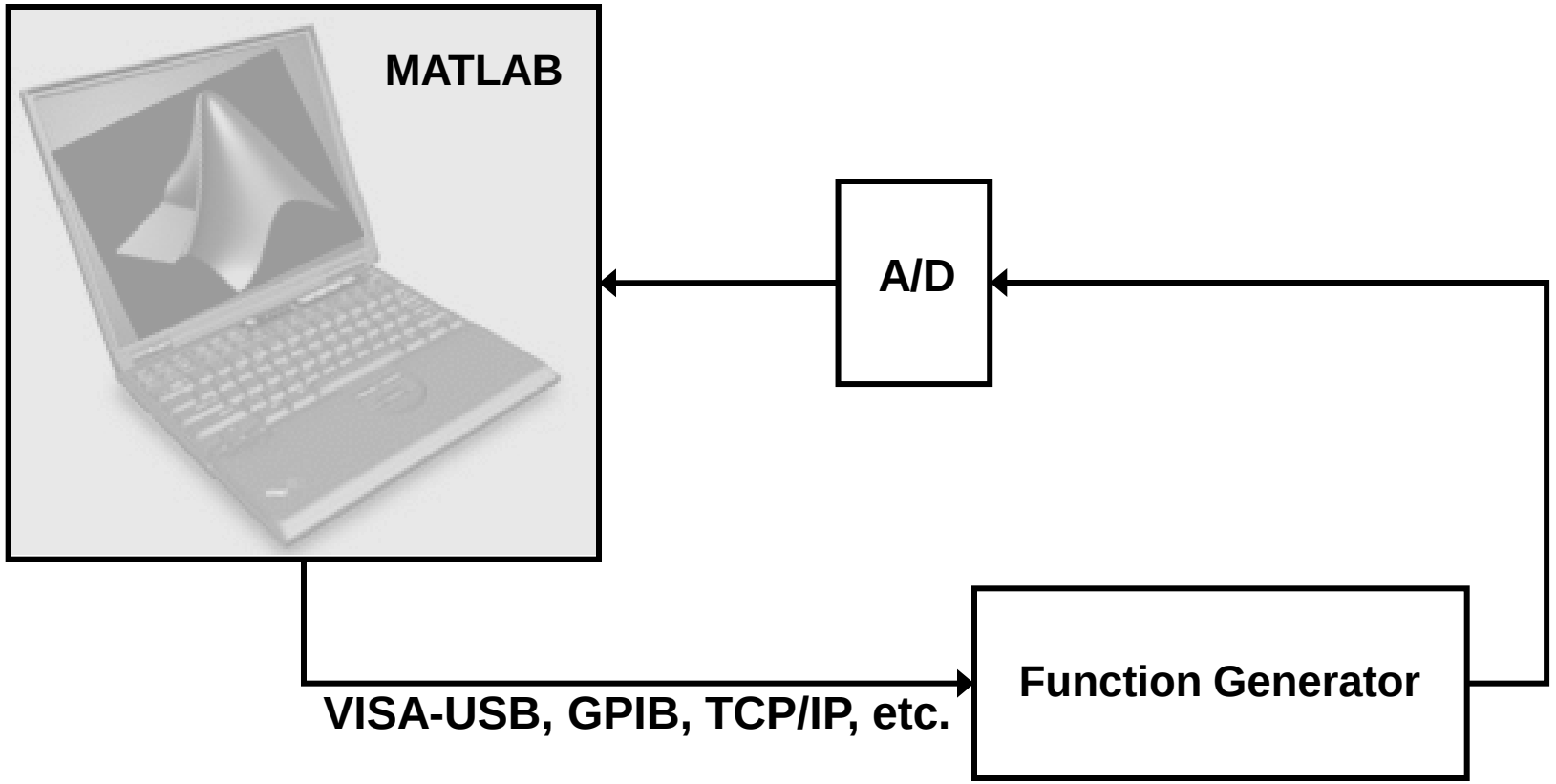
MathWorks Symposium

Adopting Model-Based Design within Aerospace and Defense

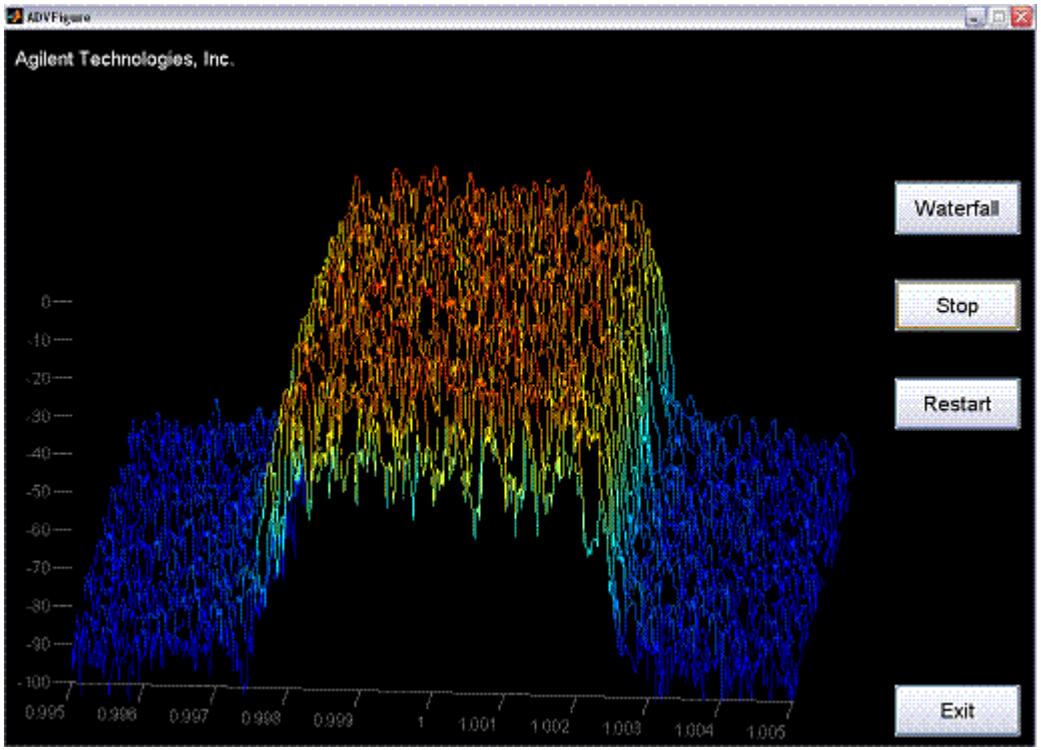
Technical Computing Workflow



Demonstration:
Instrument Control and Data Acquisition



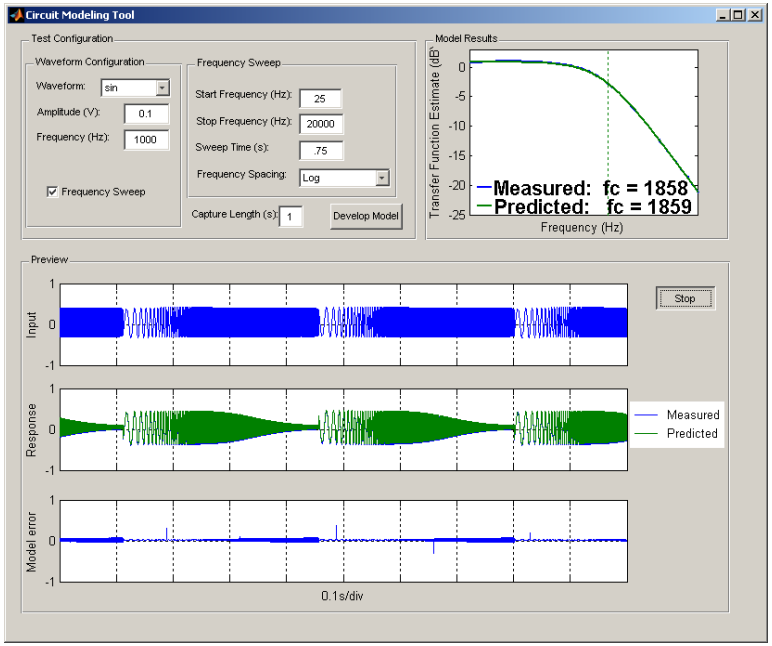
Demonstration:
Advanced Visualization Tool



Building an Analysis Application with MATLAB

Access | Explore & Discover | Share

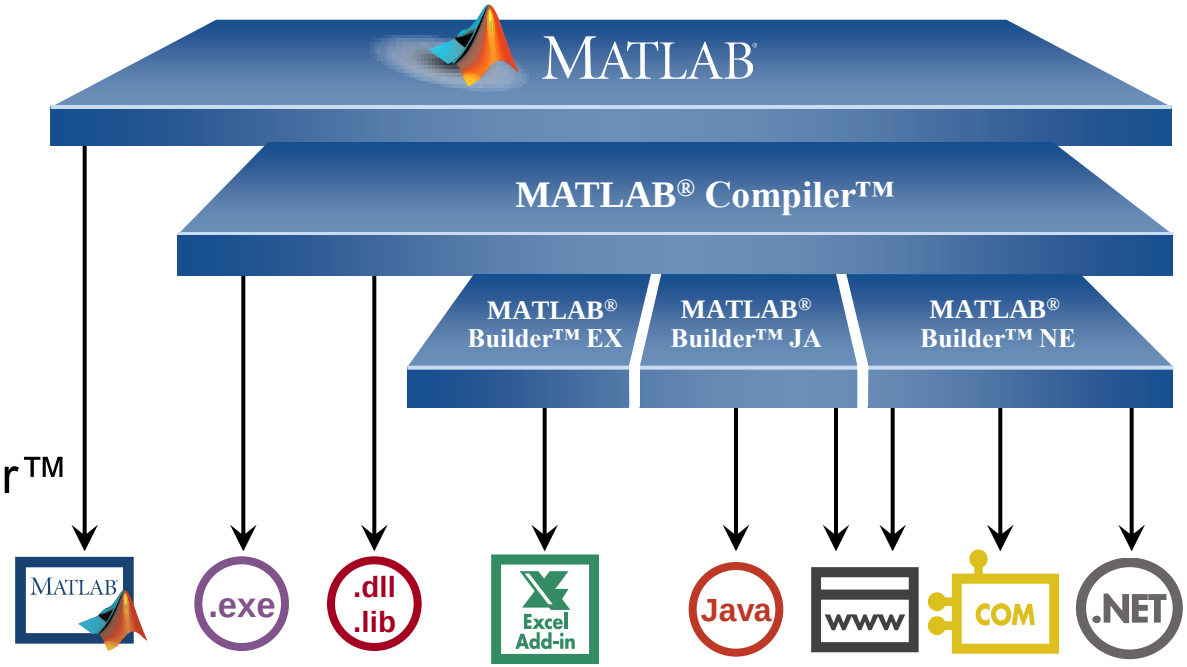
- Write reusable functions
- Leverage development tools to improve:
  - Code quality
  - Performance
  - Supportability
- Add a graphical user interface
  - Use pre-defined dialog boxes (select files, print graphics, …)
  - Develop a complete custom graphical user interface



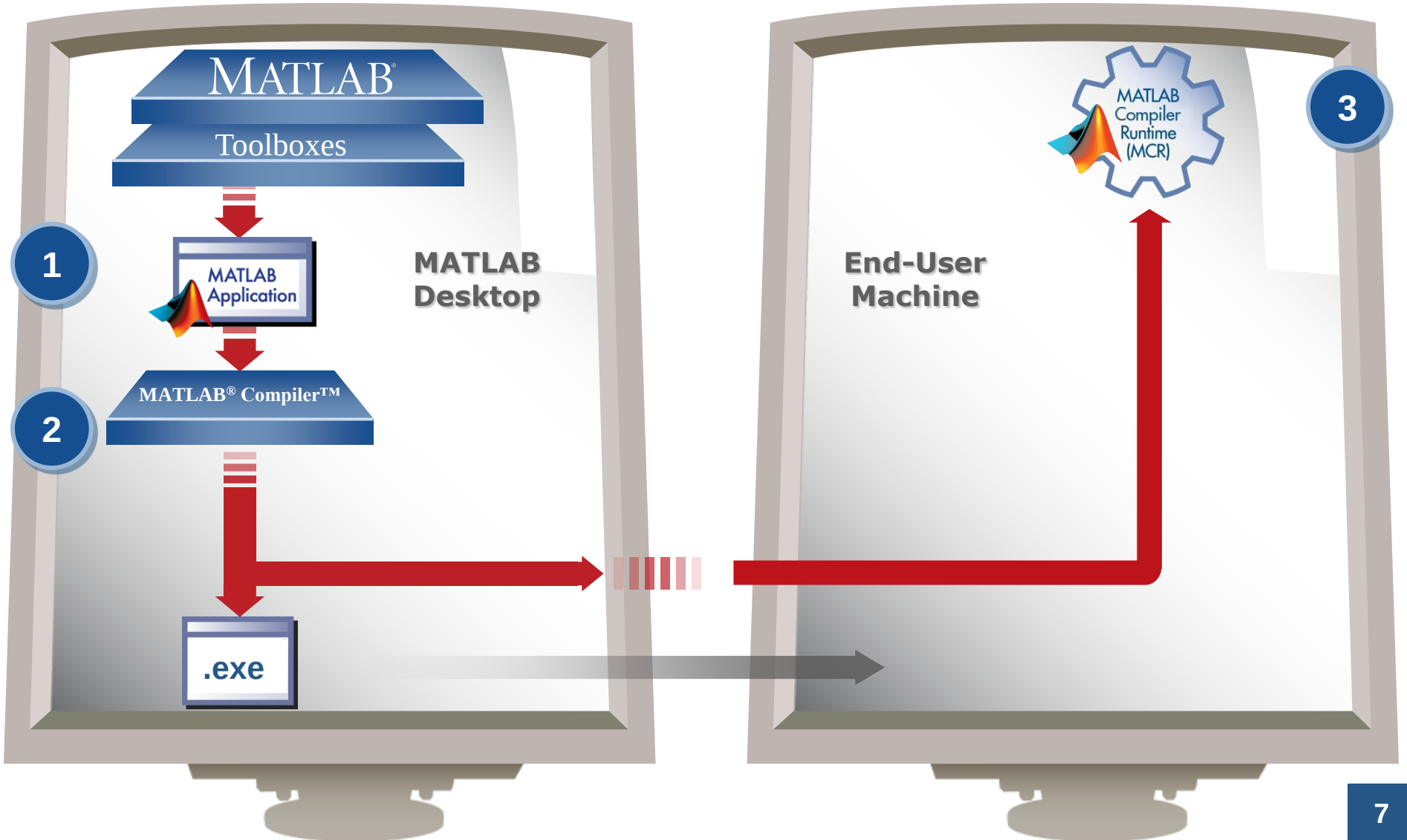
Deploying Applications with MATLAB

Access | Explore & Discover | Share

- Give MATLAB® code to other users
- Share applications with end users who do not have MATLAB
  - Use MATLAB® Compiler™ to create stand-alone executables and shared libraries
  - Use Compiler add-ons to create software components



Deploying Applications with MATLAB®



MATLAB Connects to Your Hardware Devices

Instrument Control Toolbox

Instruments and RS-232 serial devices

Data Acquisition Toolbox

Plug-in data acquisition devices and sound cards

Image Acquisition Toolbox

Image capture devices

Vehicle Network Toolbox

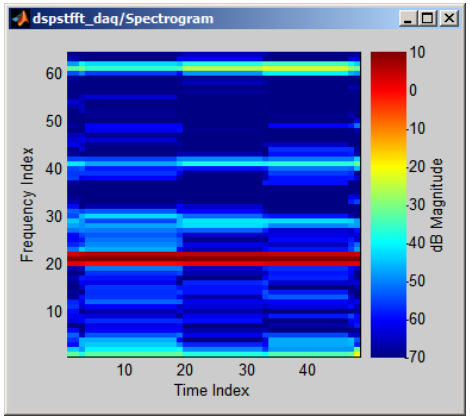
Vector CAN bus interface devices

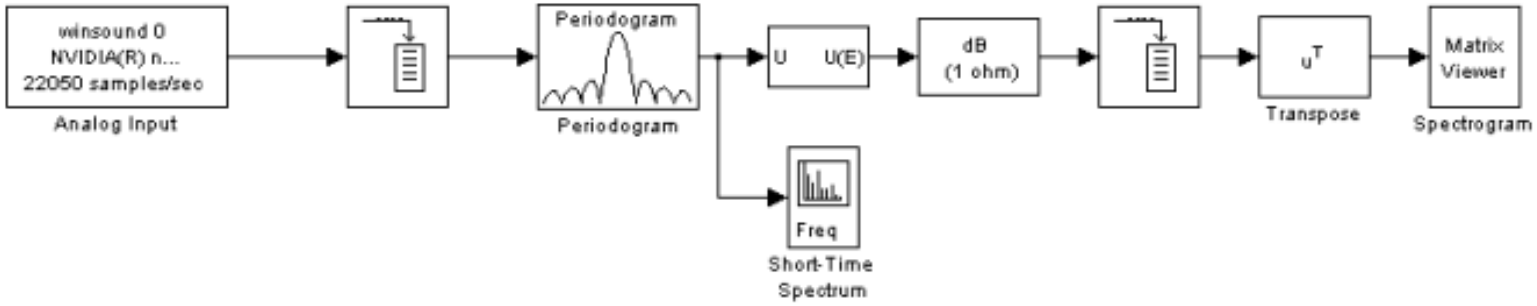
MATLAB

Interfaces for communicating with everything

Acquiring Live Data into Simulink

- Acquire live or measured data directly into Simulink® models from hardware
- Directly evaluate your Simulink algorithms against real-world data
- Support provided by Data Acquisition Toolbox, Instrument Control Toolbox, and Image Acquisition Toolbox





How Do I Get Started with Test and Measurement in MATLAB?

- For more information, watch the recorded webinar: *Acquiring Live Data into MATLAB® for Analysis* www.mathworks.com/wbnr11882.

- To discuss using MATLAB for test and measurement applications in your organization, receive technical literature, request a trial, or arrange an on-site MathWorks visit, please contact:

Byron Geannopoulos
Test and Measurement Sales
508-647-4630
bgeannop@mathworks.com

Or contact your company's MathWorks account manager.