

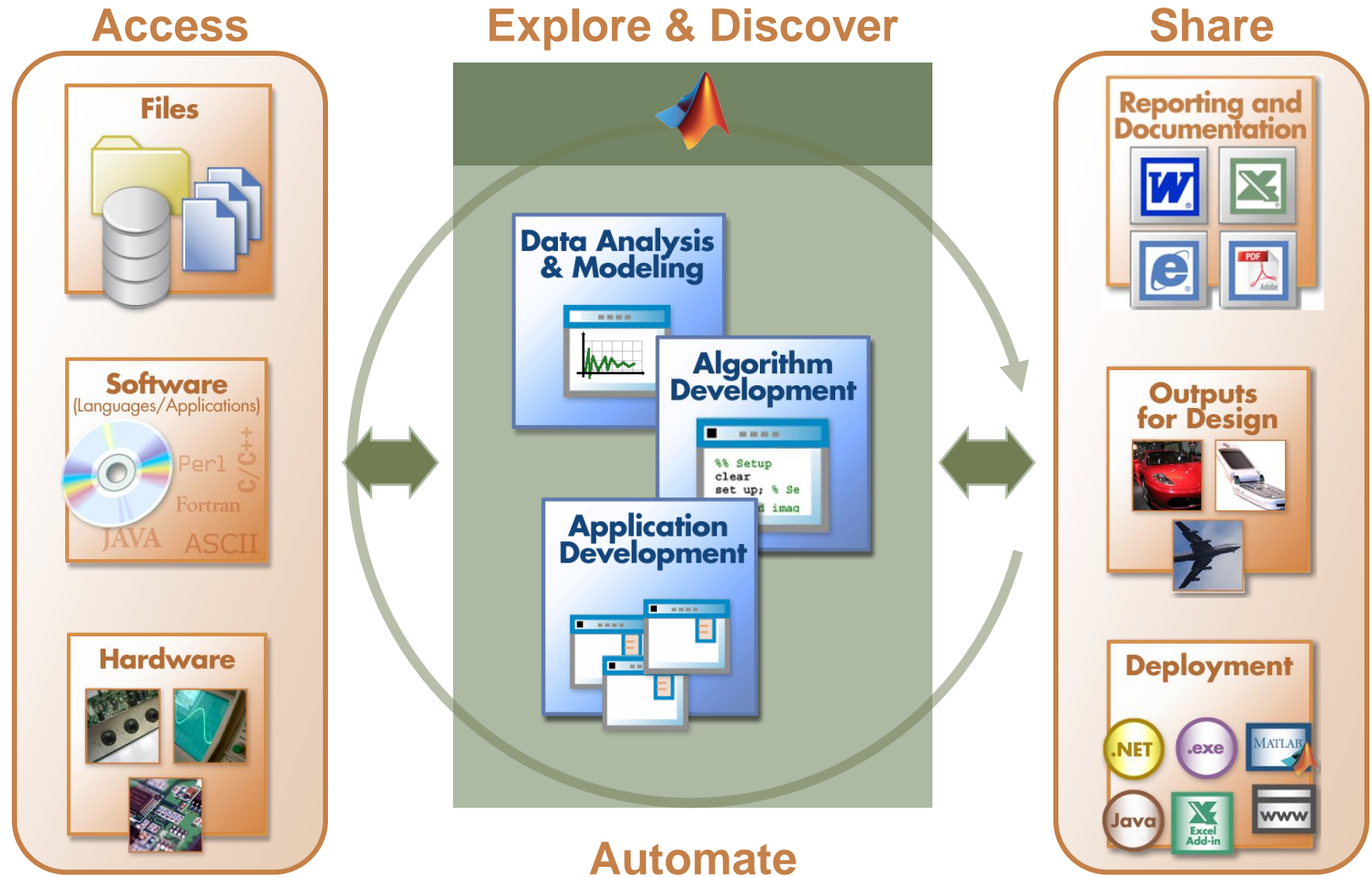
# Using MATLAB® for Data Acquisition, Instrument Control, and Data Analysis

**Isaac Noh**  
Application Engineer

MathWorks Symposium

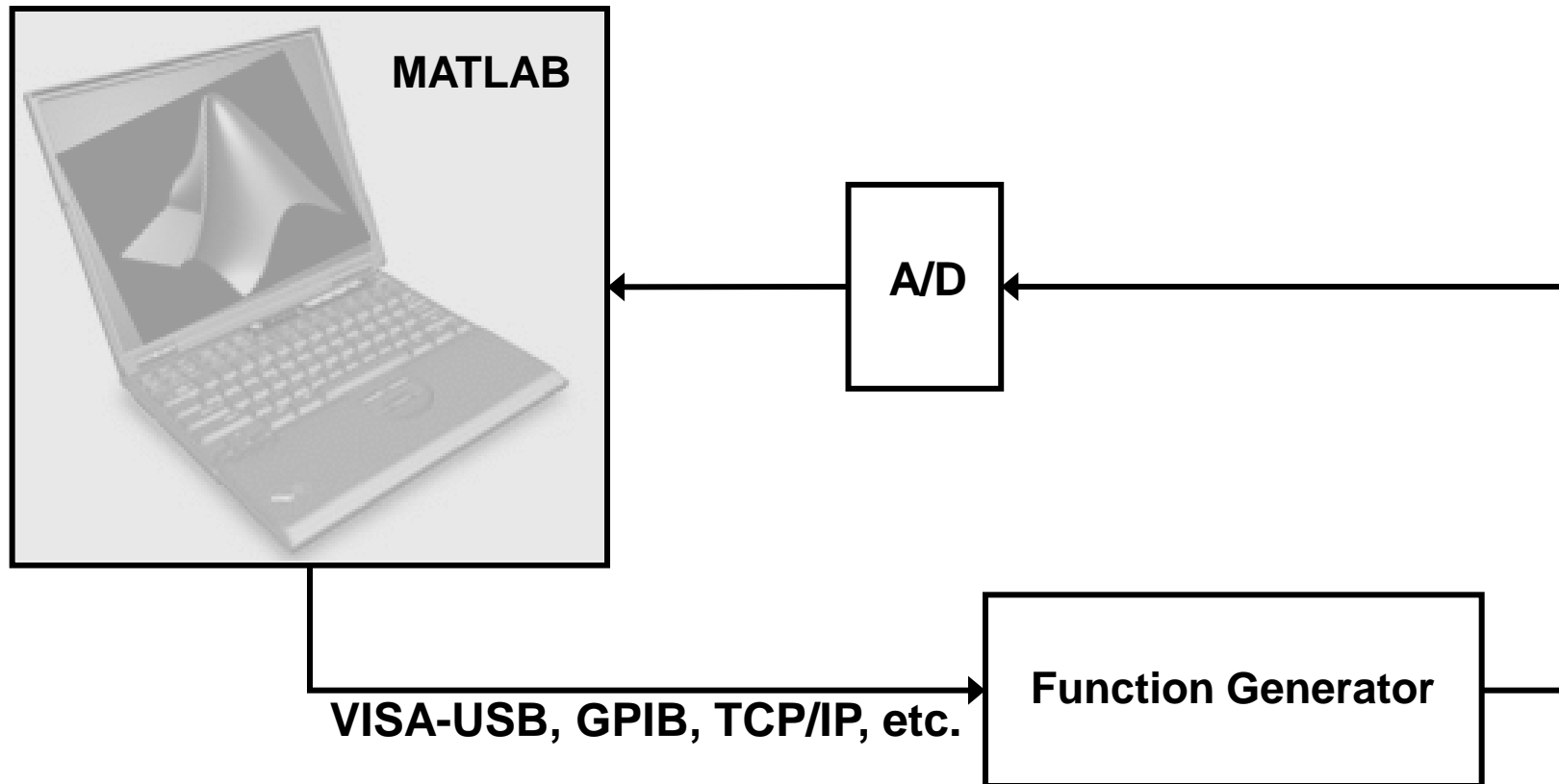
Adopting Model-Based Design  
within Aerospace and Defense

# Technical Computing Workflow

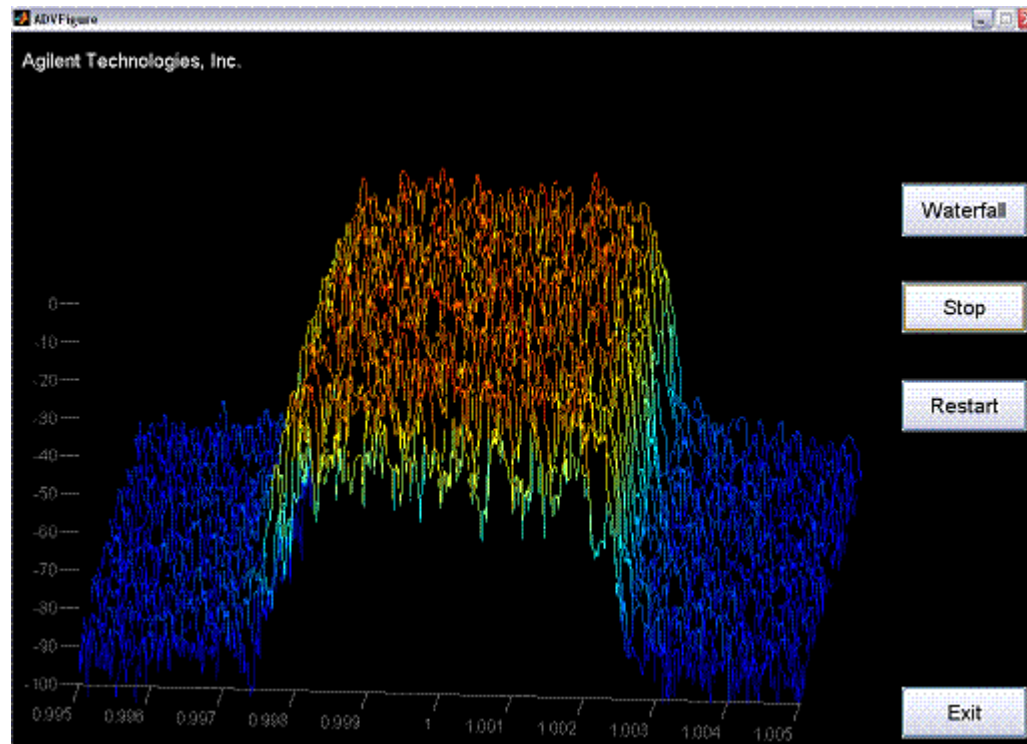


# Demonstration:

## *Instrument Control and Data Acquisition*



# Demonstration: *Advanced Visualization Tool*



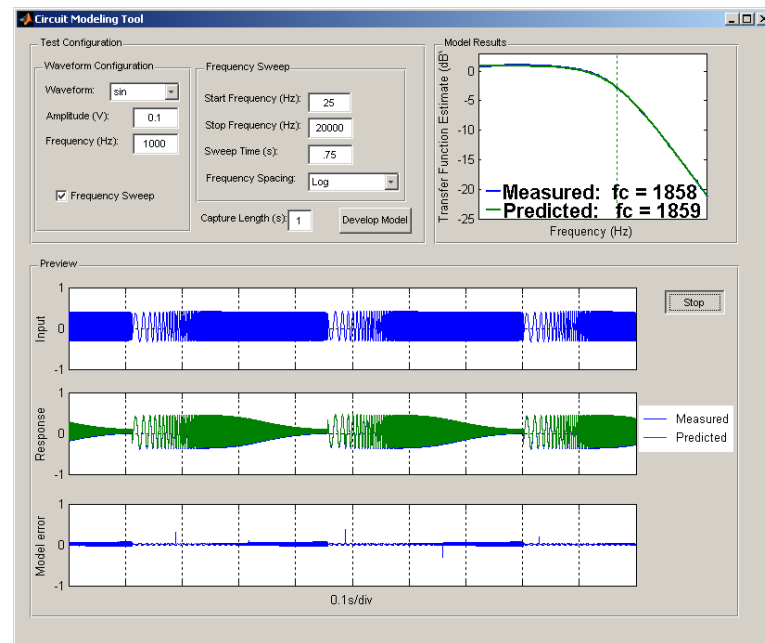
# Building an Analysis Application with MATLAB

## 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



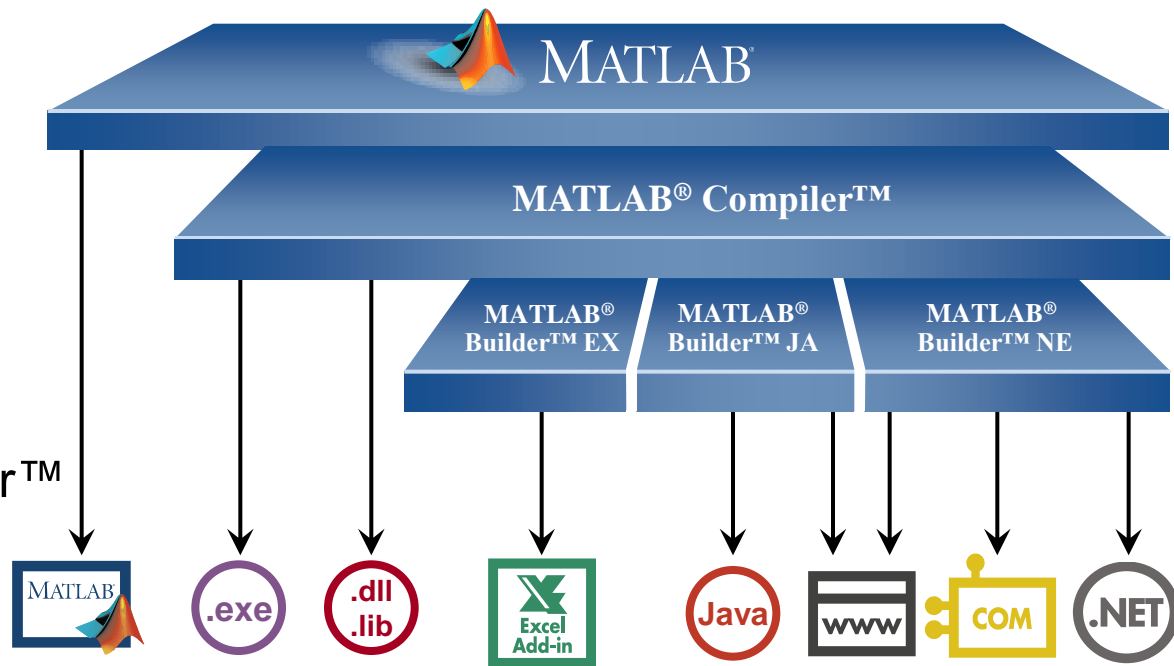
# Deploying Applications with MATLAB

Access

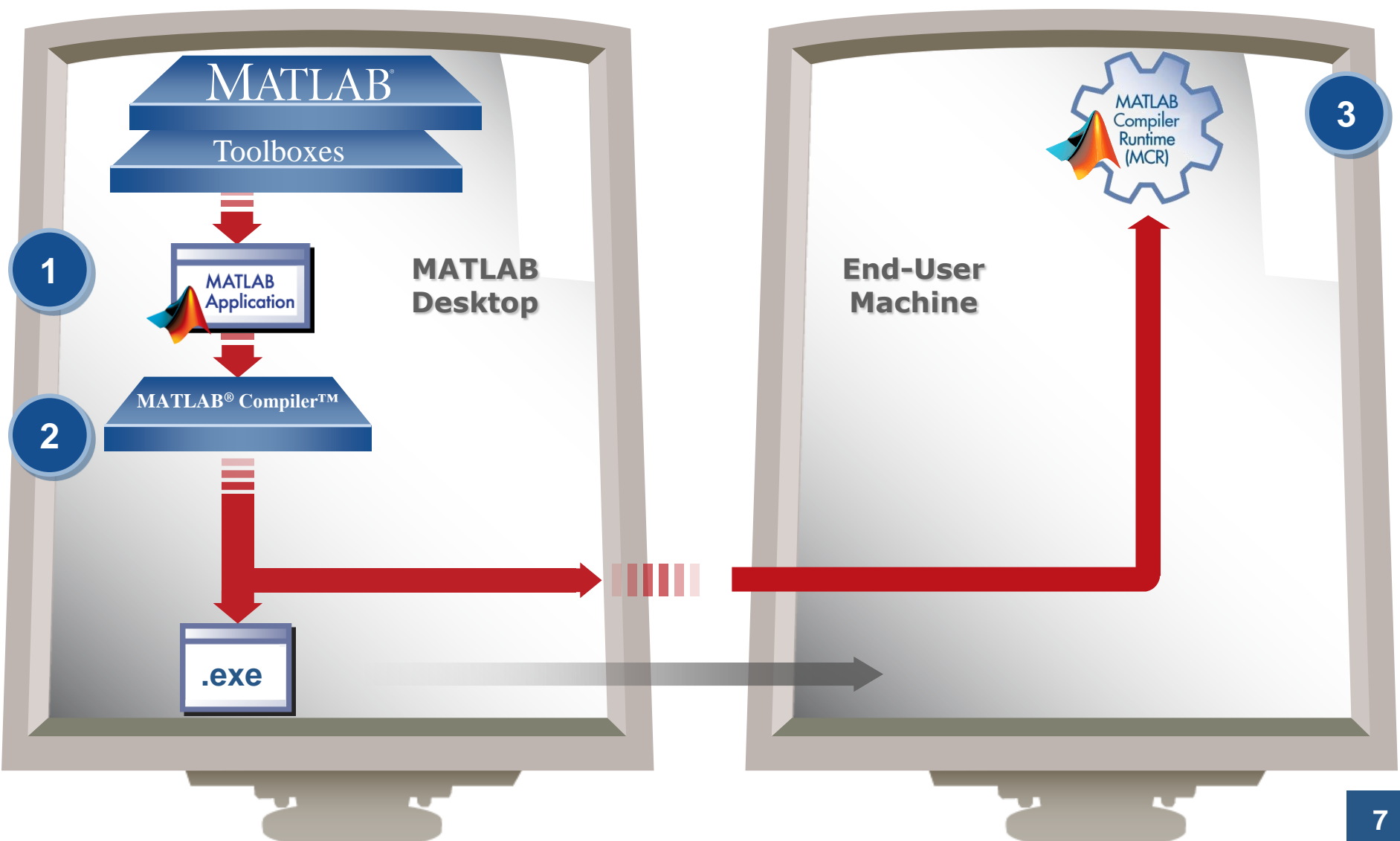
Explore & Discover

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



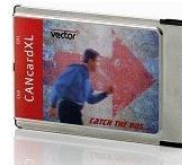
## Data Acquisition Toolbox

Plug-in data acquisition devices and sound cards



## Image Acquisition Toolbox

Image capture devices



## Vehicle Network Toolbox

Vector CAN bus interface devices

## MATLAB

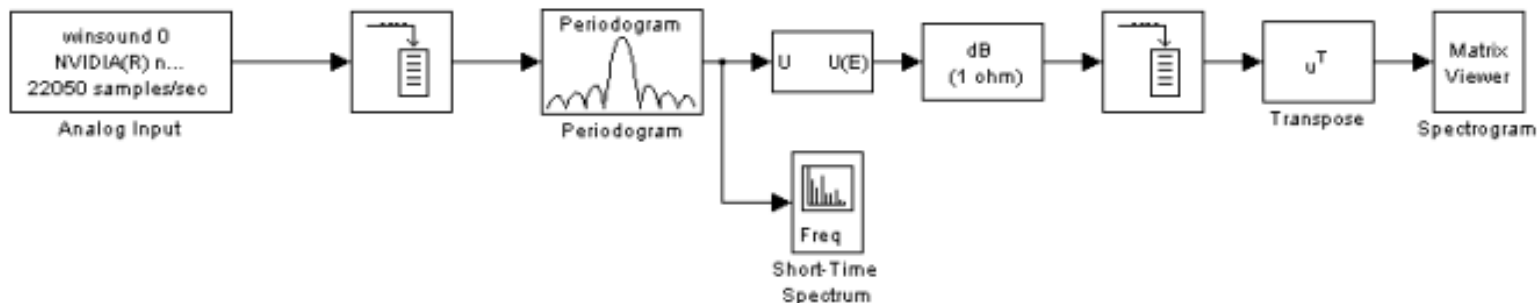
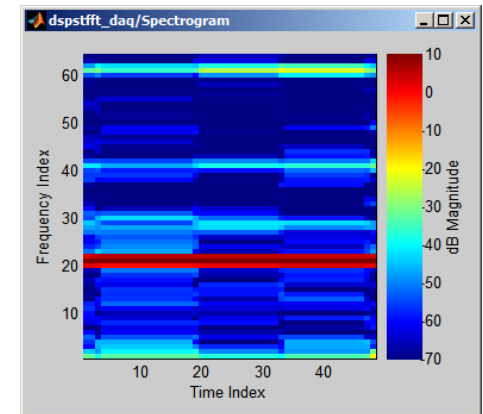
Interfaces for communicating with everything





# 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](http://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:

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[bgeannop@mathworks.com](mailto:bgeannop@mathworks.com)

Or contact your company's MathWorks account manager.

