The MathWorks

MATLAB&SIMULINK®

# MATLAB® for Excel Users

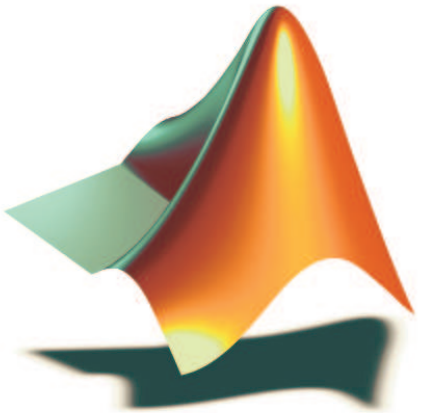
**Kevin Cohan**

**The MathWorks, Inc.**



# Agenda

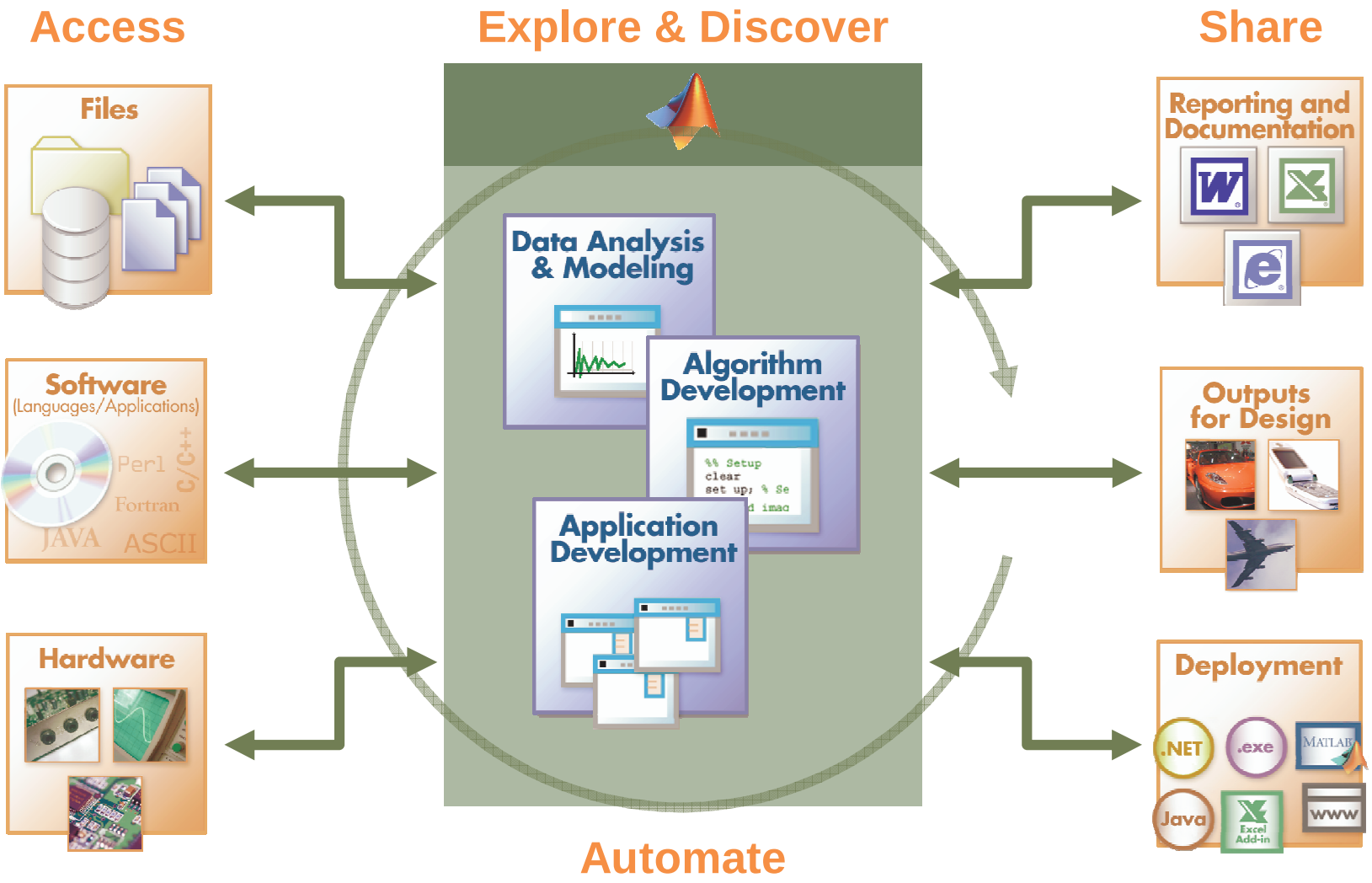
- Challenges that technical professionals face
- MATLAB® for engineering analysis
- Demonstration: Motor Noise Analysis
- Concluding remarks
- Q & A



# Engineering Challenges

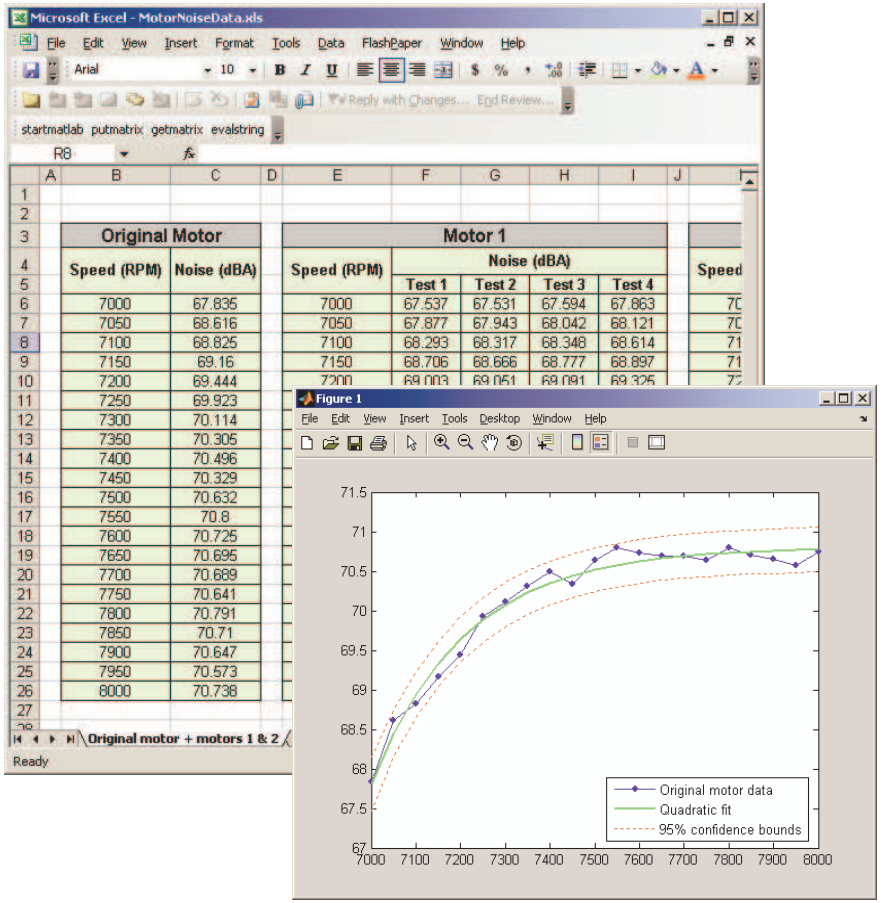
- Schedule challenges
  - Shorter time allowed for development
- Increasing design complexity
  - Large amounts of data to analyze
- Limitations of current software tools
  - General purpose tools
    - Excel, Visual Basic, C/C++, and FORTRAN
  - Specialized point-and-click tools

# MATLAB® for Technical Computing

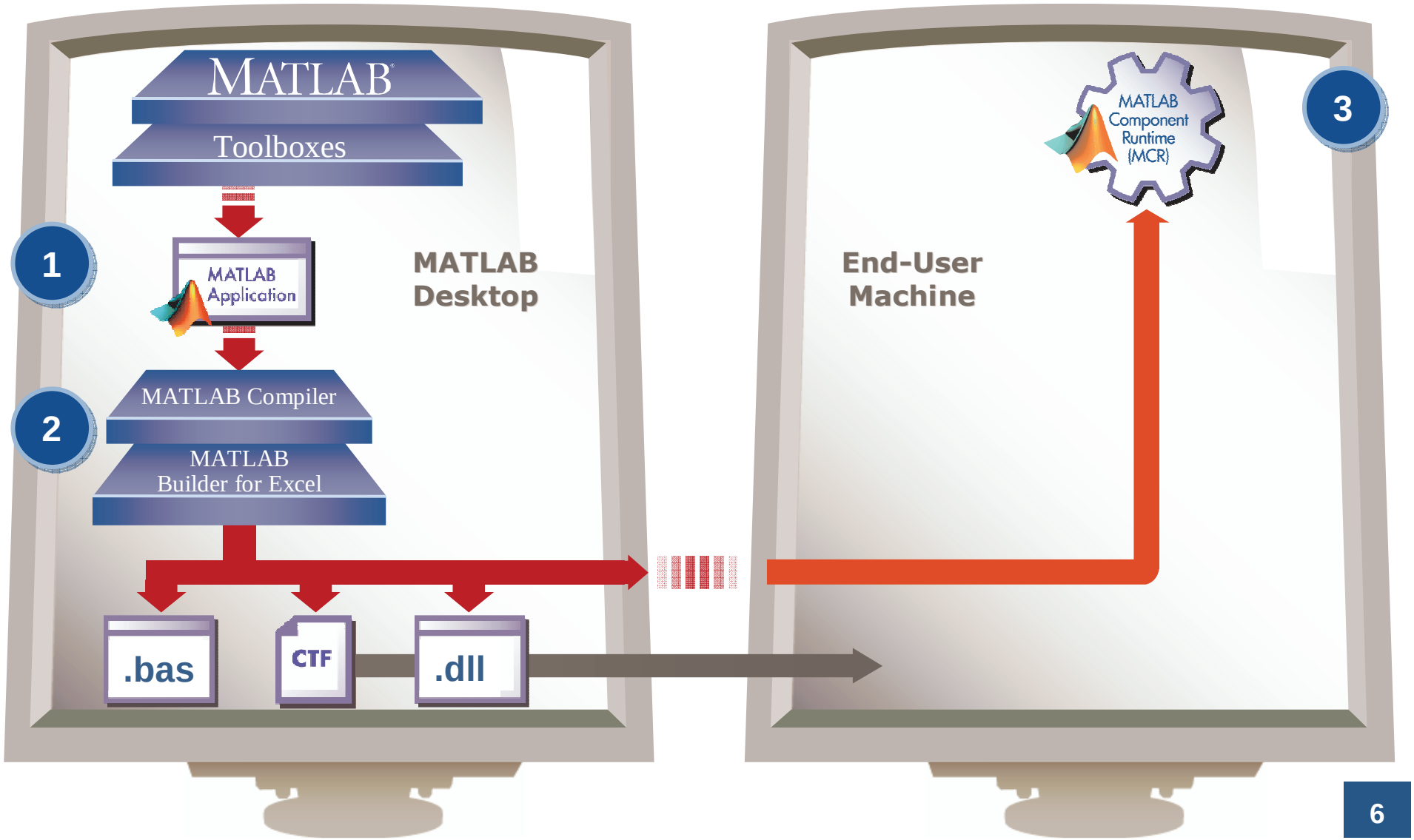


# Demonstration: Motor Noise Analysis

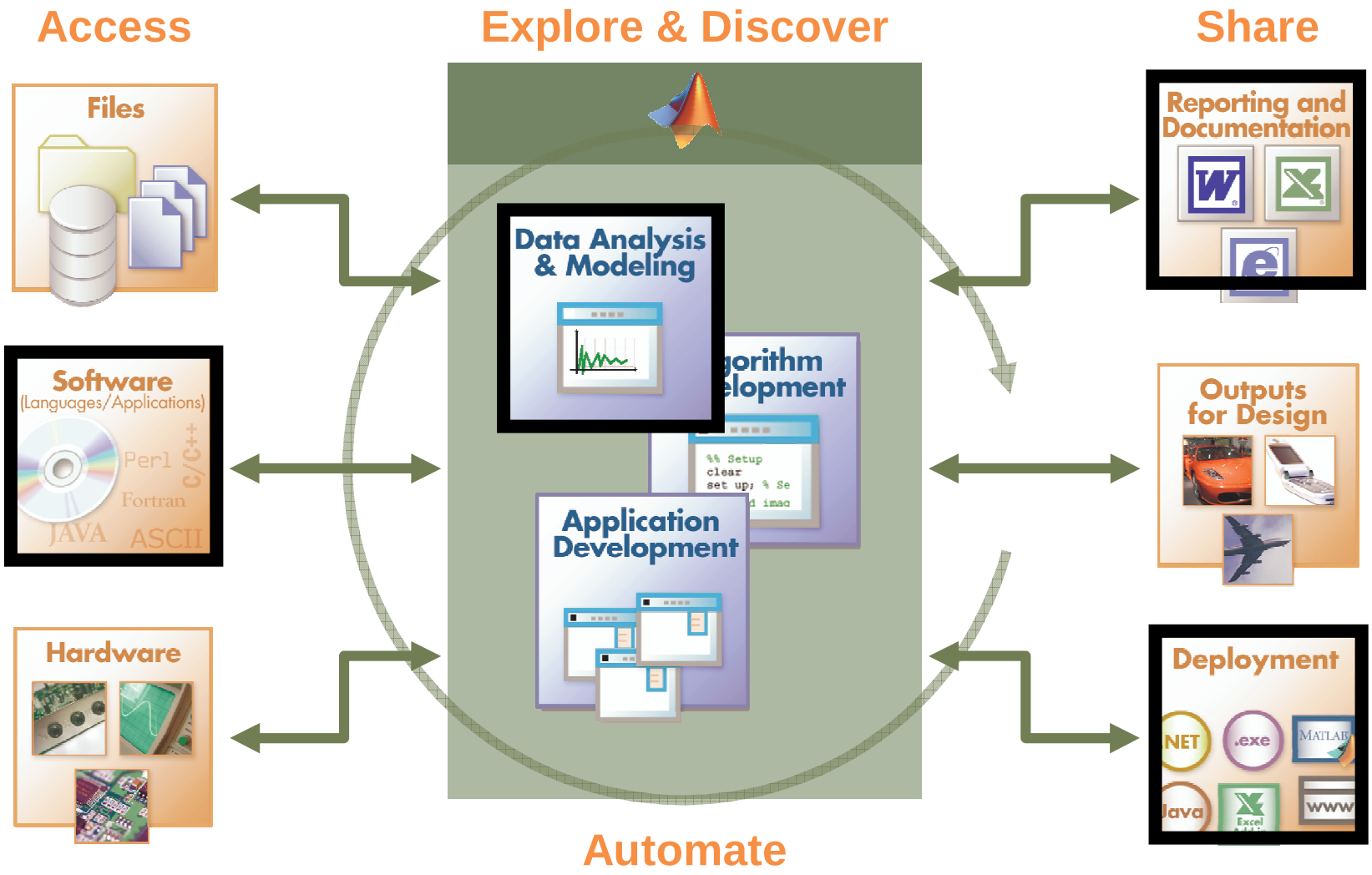
- Description
  - Existing motor can't be reused
  - Doesn't meet weight specifications
- Approach
  - Multiple new designs to consider
  - Compare noise levels of new designs to benchmark motor



# Deploying MATLAB Applications to Excel

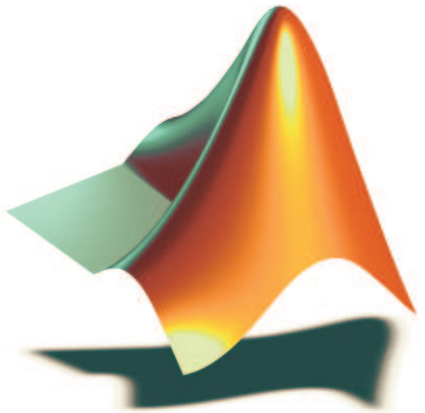


# MATLAB® for Technical Computing



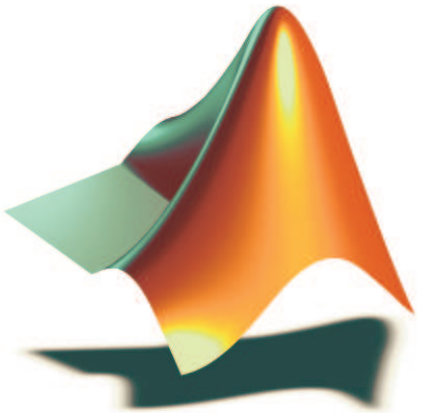
# Additional MATLAB Advantages

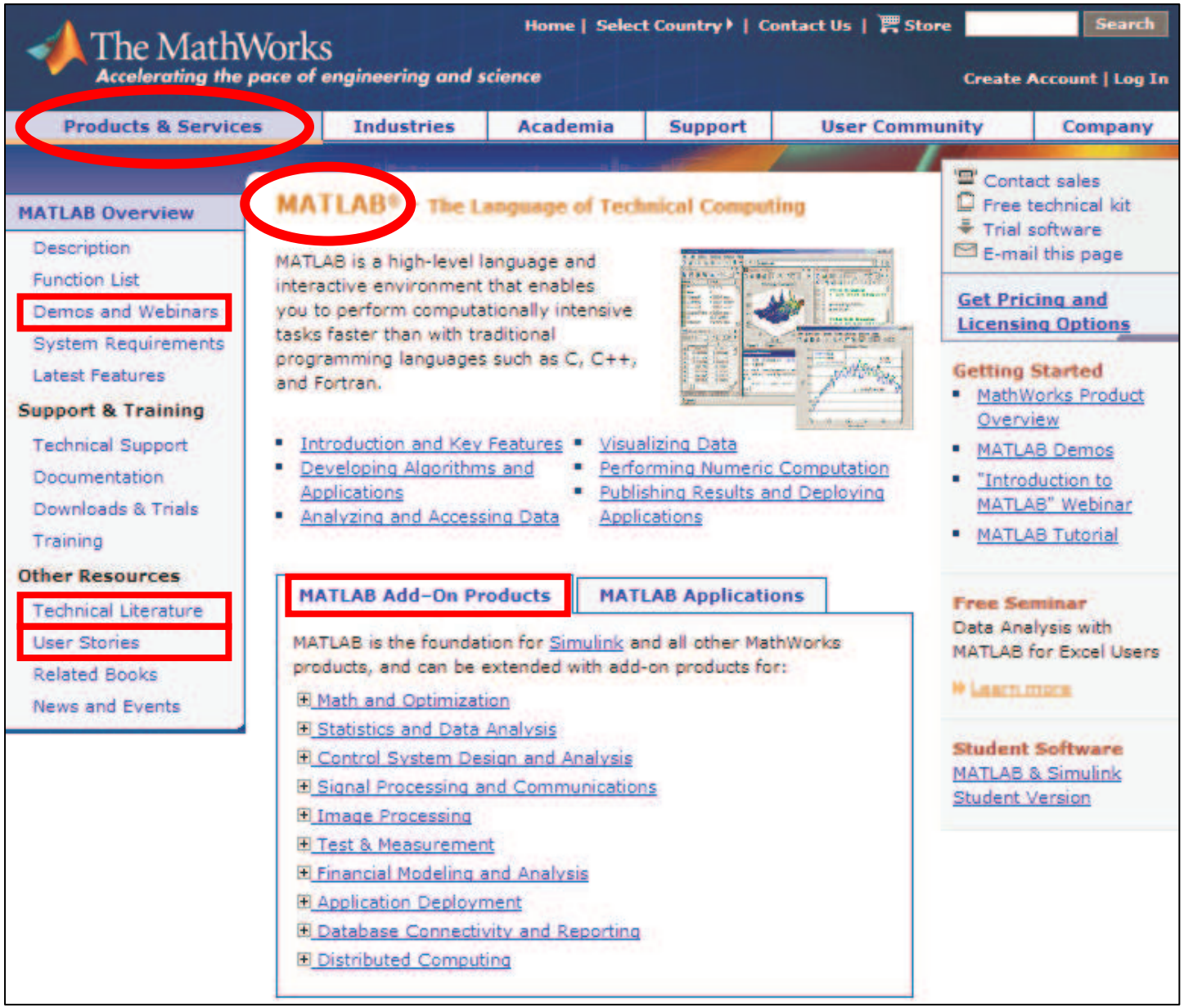
- Data access
  - Applications such as C, C++, and FORTRAN
  - External devices via serial port
- Supported file formats
  - Examples: images, audio, video
- Large data set handling
- Computational speed
- Algorithm development
  - Examples: GUIDE, programming features



# Summary

- MATLAB supplements Excel by providing:
  - Thousands of pre-built engineering and advanced analysis functions
  - Versatile plotting tools
  - Ability to easily create custom analysis routines
    - Deploy to Excel or other environments
  - Reporting capabilities

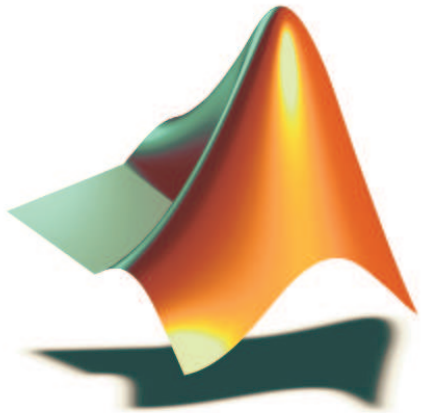



The MathWorks
Accelerating the pace of engineering and science
Home | Select Country | Contact Us | Store
Search
Create Account | Log In
Products & Services
Industries
Academia
Support
User Community
Company
MATLAB Overview
Description
Function List
Demos and Webinars
System Requirements
Latest Features
Support & Training
Technical Support
Documentation
Downloads & Trials
Training
Other Resources
Technical Literature
User Stories
Related Books
News and Events
MATLAB® The Language of Technical Computing
MATLAB is a high-level language and interactive environment that enables you to perform computationally intensive tasks faster than with traditional programming languages such as C, C++, and Fortran.
Introduction and Key Features
Developing Algorithms and Applications
Analyzing and Accessing Data
Visualizing Data
Performing Numeric Computation
Publishing Results and Deploying Applications
MATLAB Add-On Products
MATLAB Applications
MATLAB is the foundation for Simulink and all other MathWorks products, and can be extended with add-on products for:
Math and Optimization
Statistics and Data Analysis
Control System Design and Analysis
Signal Processing and Communications
Image Processing
Test & Measurement
Financial Modeling and Analysis
Application Deployment
Database Connectivity and Reporting
Distributed Computing
Contact sales
Free technical kit
Trial software
E-mail this page
Get Pricing and Licensing Options
Getting Started
MathWorks Product Overview
MATLAB Demos
"Introduction to MATLAB" Webinar
MATLAB Tutorial
Free Seminar
Data Analysis with MATLAB for Excel Users
Learn more
Student Software
MATLAB & Simulink Student Version

# Contact Information

- North America
  - Phone: 508-647-7000
  - E-mail: support@mathworks.com
- Outside North America
  - Contact your local MathWorks office or reseller:

**www.mathworks.com/contact**



# Questions?