MATLAB&SIMULINK®

- Computation

- Visualization

- Programming

- Modeling

- Simulation

- Implementation

Release Notes for Release 14

The MathWorks

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MATLAB Software Acknowledgments

MATLAB and/or its associated products include software developed by the following third parties.

ARnoldi PACKage (ARPACK)

Rich Lehoucq, Kristi Maschhoff, Danny Sorensen, and Chao Yang
`http://www.caam.rice.edu/software/ARPACK`

Assertion blocks were developed in cooperation with

Helmut Keller, Andreas Rau, and Joachim Boensch, members of the Control System Design (CSD) group at DaimlerChrysler Germany.

Automatically Tuned Linear Algebra Software (ATLAS)

R. Clint Whaley and Jack Dongarra
`http://www.netlib.org/atlas`

The Image Acquisition Toolbox DCAM adaptor uses the Carnegie Mellon University driver to communicate with cameras compatible with the IIDC 1394-based Digital Camera Specification (DCAM).

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`http://www-2.cs.cmu.edu/~iwan/1394/`

FDLIBM C math library for machines that support IEEE 754 floating point

Developed at SunSoft, a Sun Microsystems, Inc. business, by Kwok C. Ng and others. FDLIBM is freely redistributable and is available through NetLib. For information about FDLIBM, see `http://www.netlib.org`.

`fft` and related MATLAB functions are based on the FFTW library.

Developed by Matteo Frigo and Steven G. Johnson
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A few MathWorks products contain the `graphviz` code from AT&T. ("AT&T Software") proprietary to AT&T Corp. ("AT&T").

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HDF capability in the functions `imread`, `imwrite`, `imfinfo`, and `hdf` and HDF 5 capability in the functions `hdf5info` and `hdf5read` are based on code of which portions were developed at

The National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign.

J2PrinterWorks `.class` files are a product of Wildcrest Associates.

JPEG capability in the functions `imread`, `imwrite`, `imfinfo`, `print`, and `saveas`:

This software is based in part on the work of the Independent JPEG Group.

Linear Algebra PACKage (LAPACK)

`http://www.netlib.org/lapack` (for general information about LAPACK)
For details, see the *LAPACK User's Guide*.
E. Anderson, Z. Bai, C. Bischof, L. S. Blackford, J. Demmel, J. Dongarra, J. Du Croz, A. Greenbaum,
S. Hammarling, A. McKenney, and D. Sorensen
For a printed version of the *LAPACK User's Guide*, go to `http://www.siam.org`.
For an online version of the *LAPACK User's Guide,* go to
`http://www.netlib.org/lapack/lug/lapack_lug.html`.

Qhull based computational geometry capability in MATLAB

Qhull copyright (c) 1993-2003 The National Science and Technology Research Center for Computation
and Visualization of Geometric Structures, The Geometry Center, University of Minnesota
e-mail: `software@geom.umn.edu`
For complete copyright information, issue the MATLAB command `help qhull`.

Sparse matrix minimum degree permutation functions `colamd` and `symamd`

Copyright © 1998-2000 by the University of Florida. All rights reserved.
Authors of the code are Stefan I. Larimore and Timothy A. Davis (`davis@cise.ufl.edu`), University of
Florida. The algorithm was developed in collaboration with John Gilbert, Xerox PARC, and Esmond Ng,
Oak Ridge National Laboratory.
This work was supported by the National Science Foundation, under grants DMS-9504974 and
DMS-9803599.
For complete copyright information, issue the MATLAB command `edit colamd` or `edit symamd`.

The SLICOT library of numerical algorithms for computations in systems and control theory is used
in the Control System Toolbox. The SLICOT library is developed by the NICONET group
(`www.win.tue.nl/niconet/NIC2/slicot.html`).

More detailed information on SLICOT can be found in:

Benner, P., Mehrmann, V., Sima, V., Van Huffel, S., and A. Varga: "SLICOT - A Subroutine Library in
Systems and Control Theory", June 1997, NICONET Report 97-3.

SLICOT is freely available through WWW: (http://www.win.tue.nl/wgs/) or anonymous ftp:
(`ftp://wgs.esat.kuleuven.ac.be/pub/WGS/SLICOT/`).

The MATLAB implementation of TeX is compiled from Donald Knuth's original TeX parser
(Version: 3.14159) located on the TeX Archive Network: `www.ctan.org`. The LaTeX distribution was
also obtained from `www.ctan.org`.

TIFF capability in the functions `imread`, `imwrite`, `imfinfo`, `print`, and `saveas`:

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See `http://www.cise.ufl.edu/research/sparse/umfpack` for general information about UMFPACK. For details, the *UMFPACK Version 4.0 User Guide* is available at `http://www.cise.ufl.edu/research/sparse/umfpack/v4.0/UserGuide.pdf`.

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Release Notes for Release 14

Release Notes for Release 14

Introduction

Release 14 contains many products that are updated with new features and/or major bug fixes. In addition, this release incorporates several product updates that were made available in Web download form between when Release 13 with Service Pack 1 (R13SP1) was shipped and Release 14.

Where to Find Information About This Release

The following kinds of documents describe what's new in this release:

- "Release Notes for Release 14" on page 2
- "Product-Specific Release Notes" on page 3
- "Release 14 Late-Breaking News" on page 3

Release Notes for Release 14

These general release notes give you a quick overview of what products have been updated for Release 14.

These general release notes include the following sections:

- "MathWorks Products in Transition for Release 14" on page 4
- "Summary of Product Updates" on page 6
- "Highlights of Products with Major New Features and Enhancements" on page 12
- "New Products" on page 26
- "Supported Platforms" on page 31
- "MAT-File Compatibility" on page 33
- "Accessibility Notes" on page 34
- "Installation Notes" on page 40
- "Quick Access to Product-Specific Release Notes" on page 44

Printing the Release Notes for Release 14

If you are reading the general release notes for Release 14 online and would like to print them, you can link to a PDF version.

Product-Specific Release Notes

There are release notes for almost all the products included in Release 14. The product-specific release notes include one or more of the following sections:

- New Features
- Major Bug Fixes
- System Limitations
- Upgrading From an Earlier Release
- Known Software and Documentation Problems

The product-specific release notes are available as part of each product's online documentation set and on the MathWorks Web site.

Release 14 Late-Breaking News

For the latest information about Release 14, see the Release 14 Late-Breaking News in the Documentation section of the MathWorks Web site.

MathWorks Products in Transition for Release 14

The following products have been renamed or restructured for Release 14.

Note For details, see Products in Transition for Release 14 on the MathWorks Web site.

DSP Blockset Renamed

The DSP Blockset has been renamed. The new name is the Signal Processing Blockset.

Fixed-Point Blockset Replaced

The Fixed-Point Blockset has been replaced by two new products, Fixed-Point Toolbox and Simulink® Fixed Point. This product restructuring reflects the broad expansion of fixed-point capabilities in MATLAB® and Simulink. The Fixed-Point Toolbox introduces fixed-point operations to the MATLAB language and Simulink Fixed Point enables fixed-point capabilities across much of the Simulink product family.

See the release notes for Simulink Fixed Point and the Fixed-Point Toolbox for details.

Filter Design Toolbox Changed

The Quantizer object and its associated methods have been moved from the Filter Design Toolbox to the Fixed-Point Toolbox, a new product that introduces fixed-point capabilities for verifying your fixed-point designs in MATLAB.

For details, see the Filter Design Toolbox release notes.

MATLAB COM Builder Renamed

The MATLAB COM Builder product has been renamed. The new name is MATLAB Builder for COM.

MATLAB Excel Builder Renamed

The MATLAB Excel Builder product has been renamed. The new name is MATLAB Builder for Excel.

MATLAB Link for Code Composer Studio Development Tools Renamed

The MATLAB Link for Code Composer Studio® Development Tools product has been renamed. The new name is Link for Code Composer Studio Development Tools.

Nonlinear Control Design Blockset Renamed

The Nonlinear Control Design Blockset has been renamed. The new name is Simulink Response Optimization.

Simulink Performance Tools and Requirements Management Interface Changed

Release 14 splits the product formerly known as the Simulink Performance Tools into two new products: Simulink Accelerator and Simulink Validation and Verification. The Simulink Accelerator product consists of the Simulink Accelerator and Profiler. The Simulink Verification and Validation product includes the Model Coverage Tool and the Requirements Management Interface (no longer being offered as a separate product).

MATLAB Runtime Server

The MATLAB Runtime Server is no longer supported because its functionality is encompassed by the new MATLAB Compiler 4.0. If you developed applications that worked with the MATLAB Runtime Server, you can now compile those applications with the MATLAB Compiler into stand-alone executables and deploy them to your users. The MATLAB Compiler's MATLAB Component Runtime (MCR) facility provides the complete set of computational and graphical capabilities of MATLAB.

Summary of Product Updates

This section summarizes the kinds of updates made to each product for Release 14. The products are organized into the following groups:

- "MATLAB Products" on page 7
- "Toolboxes" on page 7
- "Simulink Products" on page 9
- "Blocksets" on page 11

Products *not* listed in one of the tables below had no significant updates for Release 14. However, there may be upgrading issues or other important information in the release notes for those products. See "Quick Access to Product-Specific Release Notes" on page 44 for links to all the product-specific release notes.

Also, some new products were introduced between R13SP1 and Release 14. Those products are listed in "New Products" on page 26.

Note If you are reading the HTML version of these release notes, the links below take you to the individual release notes for specific products. These product-specific release notes are available in the online documentation for each product and on the MathWorks Web site.

MATLAB Products

The product name links (e.g., MATLAB) in the table below bring you to product-specific release notes. The "Highlights" links bring you to a summary (in these release notes) of major new features. The "Details" links bring you to descriptions of new features or bug fixes (in the product-specific release notes).

Product	New Features	Major Bug Fixes
MATLAB	Highlights	Details
MATLAB Compiler	Highlights	
MATLAB Report Generator	Highlights	
Excel Link	Details	

Toolboxes

The product name links (e.g., Communications Toolbox) in the table below bring you to product-specific release notes. The "Highlights" links bring you to a summary (in these release notes) of major new features. The "Details" links bring you to descriptions of new features or bug fixes (in the product-specific release notes).

Product	New Features	Major Bug Fixes
Communications Toolbox	Highlights	Details
Control System Toolbox	Highlights	Details
Data Acquisition Toolbox		Details
Database Toolbox	Highlights	Details
Datafeed Toolbox	Details	
Filter Design Toolbox	Highlights	Details
Financial Derivatives Toolbox	Highlights	

Product	New Features	Major Bug Fixes
Financial Toolbox	Details	
Fixed-Income Toolbox	Details	
GARCH Toolbox	Details	
Image Acquisition Toolbox	Details	Details
Image Processing Toolbox	Details	Details
Instrument Control Toolbox	Highlights	Details
Mapping Toolbox	Highlights	Details
Model-Based Calibration Toolbox	Details	
Model Predictive Control Toolbox	Highlights	
Optimization Toolbox	Highlights	Details
Signal Processing Toolbox	Details	Details
Statistics Toolbox	Highlights	
Symbolic Math Toolbox	Details	
System Identification Toolbox	Highlights	
Virtual Reality Toolbox	Highlights	Details
Wavelet Toolbox	Highlights	Details

Simulink Products

The product name links (e.g., Simulink) in the table below bring you to product-specific release notes. The "Highlights" links bring you to a summary (in these release notes) of major new features. The "Details" links bring you to descriptions of new features or bug fixes (in the product-specific release notes).

Product	New Features	Major Bug Fixes
Simulink	Highlights	Details
Embedded Target for Infineon® C166 Microcontrollers	Details	
Embedded Target for Motorola® HC12	Details	Details
Embedded Target for Motorola® MPC555	Highlights	
Embedded Target for OSEK/ VDX®	Details	
Embedded Target for TI C6000™ DSP	Highlights	Details
Real-Time Windows Target	Details	Details
Real-Time Workshop®	Highlights	Details
Real-Time Workshop Embedded Coder	Highlights	Details
Requirements Management Interface (incorporated into new Simulink Verification and Validation)	Details	Details
SimMechanics	Details	Details
SimPowerSystems	Details	Details
Simulink Accelerator		Details

Product	New Features	Major Bug Fixes
Simulink Fixed Point	Highlights	Details
Simulink Performance Tools (incorporated in new Simulink Accelerator and Simulink Verification and Validation products)		
Simulink Report Generator	Highlights	
Simulink Response Optimization	Highlights	
Simulink Verification and Validation	Details	Details
Stateflow®	Highlights	Details
Stateflow® Coder	Highlights	Details
xPC Target	Details	Details
xPC TargetBox™	Details	

Blocksets

The product name links (e.g., Aerospace Blockset) in the table below bring you to product-specific release notes. The "Highlights" links bring you to a summary (in these release notes) of major new features. The "Details" links bring you to descriptions of new features or bug fixes (in the product-specific release notes).

Product	New Features	Major Bug Fixes
Communications Blockset	Highlights	Details
Dials & Gauges Blockset	Details	Details
DSP Blockset (renamed Signal Processing Blockset)	Highlights	Details
Fixed-Point Blockset (incorporated into new Simulink Fixed Point)	Highlights	Details
Nonlinear Control Design Blockset (renamed Simulink Response Optimization)	Highlights	
Signal Processing Blockset	Highlights	Details

Highlights of Products with Major New Features and Enhancements

This section highlights some of the major new features and enhancements introduced in Release 14. The products are organized into the following groups:

MATLAB Products

This section highlights new features and enhancements in the following products:

MATLAB

Desktop Tools and Development Environment

- Redesigned desktop, providing easier management of multiple documents, docked figures, the ability to save custom layouts, and shortcuts to commonly used commands
- Enhanced array editor and workspace browser for easier viewing, editing, and graphing of your variables
- Current directory browser tools, letting you scan your code for efficiency, dependencies, and code coverage
- M-Lint code analyzer to help you modify your code for maximum performance and maintainability
- Editor enhancements, including the ability to execute individual sections of M-code, publish to multiple formats, and highlight HTML, C/C++, and Java

Programming

- Ability to create nested functions, providing an easier way to define and call customized functions
- Anonymous functions for defining single-line functions at the command line or in scripts
- Conditional break points, letting you stop when any expression is true
- Block comment markers to comment out an entire section of code

Mathematics

- Integer arithmetic, letting you process larger integer data sets
- Single-precision arithmetic, linear algebra, FFT, and filtering, enabling you to process larger single-precision data sets
- More robust computational geometry routines using Qhull 2003.1, giving greater control over algorithm choice
- `linsolve` function, enabling you to solve systems of linear equations faster by specifying the structure of the matrix of coefficients
- ODE solver functionality to handle implicit differential equations and multipoint boundary value problems

Graphics and 3-D Visualization

- New plotting interface for interactively creating and editing plots without entering M-code
- Easier modification of specialized charts
- M-code generation from a figure, letting you programmatically reuse custom plots
- Enhanced plot annotation, including drawing shapes, object alignment, and pinning of annotations to data points
- Data exploration tools, including plot panning and data tips for easily measuring values while browsing plots
- The ability to transform groups of graphics objects
- Improved Handle Graphics® support for rendering advanced equations using the full TeX and LaTeX interface

Building Graphical User Interfaces

- Panels and button groups enable grouping of user interface controls in GUIDE
- ActiveX controls accessible from GUIDE

File I/O and External Interfaces

- New file I/O functions for reading very large arbitrary formatted text files and writing to Excel and HDF5 files
- Compressed MAT-files option, letting you save large data sets faster and with less disk space
- `javaaddpath` function for adding, removing, and reloading Java classes dynamically without restarting MATLAB
- COM custom interface, server events, and Visual Basic script support
- Access to Web services based on Simple Object Access Protocol (SOAP)
- FTP object for connecting to an FTP server to perform remote file operations
- Support for the Unicode international character set standard, enabling character data in MAT-files to be shared between languages

Performance and Platform Support

- JIT Accelerator coverage of all numeric types and function calls
- JIT Accelerator generation of MMX functions for integer arithmetic
- FFT routines using the new version of FFTW3
- 3GB switch support under Windows XP, giving an additional 1GB of data memory to MATLAB

MATLAB Compiler

- Compilation of MATLAB algorithms containing objects (a type of data structure)
- Shared libraries versioning, letting you run Release 14 and Release 13 MATLAB Compiler-generated applications simultaneously on the same machine
- Improved C++ interface for MATLAB Compiler-generated wrapper functions

- Generation of applications and components for stand-alone applications, C and C++ shared libraries, Excel plug-ins (with MATLAB Builder for Excel), and COM objects (with MATLAB Builder for COM)

MATLAB Report Generator

- Redesigned graphical user interface
- Faster report generation
- Scriptable setup files can be built from the command line
- Ability to generate reports as Adobe PDF files
- Additional MATLAB components, including Axes Snapshot, Handle Graphics Summary Table, and MATLAB Property Table

Toolboxes

This section highlights new features and enhancements in the following products:

Communications Toolbox

- A graphical user interface and several functions that help you analyze the bit error rate (BER) performance of communication systems
- Linear equalizers, decision feedback equalizers, and maximum-likelihood sequence estimation equalizers
- Rayleigh and Rician fading channels
- Block and convolutional interleavers
- Huffman encoder and decoder
- Support for rectangular pulse shaping at a transmitter and matched filtering at the corresponding receiver
- Enhanced support for digital baseband modulation and analog passband modulation

Control System Toolbox

- Overhauled numerical engine based on the LAPACK and SLICOT libraries for improved speed and accuracy
- Better model reduction algorithms with support for unstable models
- New commands for modal decompositions

Database Toolbox

- Support for BINARY and OTHER Java SQL objects, such as bitmap images
- Functionality to write data back to any ODBC/JDBC database through the Visual Query Builder
- Visual Query Builder support for structures and numeric arrays with display features

Filter Design Toolbox

- Extensive support for second-order section IIR filters, including design, reordering, scaling, graphical analysis, and fixed-point implementation
- Ability to cascade several multirate filters together and to cascade single-rate and multirate filters

- Enhanced fixed-point filter simulation, analysis, and integration with the Signal Processing Blockset
- FIR filter design functions
- FDATool improvements, including advanced filter design methods, multirate filter creation panel, redesigned quantization panel, and enhanced SOS reordering/scaling dialog
- Filter object methods for FPGA simulation with the Filter Design HDL Coder
- New filter design objects for FIR and IRR filter design

Financial Derivatives Toolbox

- Cox-Ross-Rubinstein and Equal Probability models for computing the prices and dollar sensitivities of exotic equity options, including Bermuda, compound, barrier, Asian, and lookback.

Instrument Control Toolbox

- Instrument driver support, including IVI, VXI*plug&play*, and MATLAB instrument drivers, enabling instrument communication without having to learn instrument specific commands
- New graphical user interface (`tmtool`) for instrument identification, configuration, and communication
- Instrument driver development and testing tools for creating and verifying custom instrument drivers
- Tools to modify IVI and VXI*plug&play* drivers to include MATLAB analysis routines

Mapping Toolbox

Note The Mapping Toolbox 2.0, a Web-download version made available after Release 13SP1, includes the major new features highlighted below. The Mapping Toolbox 2.0.1, (an update on the Web for R13SP1) included bug fixes only. Version 2.0.2 (in Release 14) includes Compiler-related updates to Version 2.0.1.

- Support for standard GIS and geospatial file formats, including ERSI Shapefiles, GeoTIFF, and "worldfiles" for spatially registered images
- Display functions for vector features, georeferenced imagery, and data grids in projected map coordinates
- Functions for vector symbolization based on feature attributes
- Support for the Transverse Mercator projection and the PROJ.4 projection library
- Interactive Map Viewer

Model Predictive Control Toolbox

- Graphical user interface for designing and simulating model predictive controllers
- Plant models represented as LTI objects
- Block for implementing model predictive controllers in Simulink
- One-step controller design using Simulink models
- Ability to deploy the controller for online and real-time applications

Optimization Toolbox

- Binary integer programming solver
- New implementation of the unconstrained optimization function `fminunc` for medium-scale problems
- Ability to use a simplex algorithm with the linear programming function `linprog`
- Output function available to receive optimization function calls at each iteration of the algorithm
- Additional diagnostic output information

Statistics Toolbox

- Graphical user interface and command-line functions for fitting and plotting distributions to data, evaluating distributions, and managing data fits and display types
- Additional multivariate plotting functions
- Enhanced maximum likelihood estimates (MLE) functionality
- Nonmetric multidimensional scaling
- Support for N-D arrays in random number generation and descriptive statistics

System Identification Toolbox

Note The System Identification Toolbox does not introduce any significant updates for Release 14. It does incorporate the major updates of Version 6.0 (highlighted below), which was released in Web download form after Release 13 with Service Pack 1 was released.

- Model identification and validation using frequency-domain data
- Simplified identification and validation of first-, second-, and third-order continuous-time models with delays
- Improved integration with Simulink to import estimated models and transfer data between the toolbox and Simulink

Virtual Reality Toolbox

- Support for recording animation files
- Ability to use vector and matrix data types for manipulating data in the scene
- Ability to control the animation rate from Simulink to visually express relative velocities and accelerations
- Improved viewer with view and run toolbar
- Support for USB Space Mouse devices, Space Traveler motion controller, and force-feedback joysticks

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Wavelet Toolbox

- Lifting schemes
- Wavelet for continuous wavelet transform (CWT)
- Functions for image fusion
- Fractional Brownian Generation 1-D

Simulink Products

This section highlights new features and enhancements in the following products:

- "Simulink" on page 20
- "Embedded Target for Motorola MPC555" on page 21
- "Embedded Target for TI C6000 DSP" on page 22
- "Real-Time Workshop" on page 22
- "Real-Time Workshop Embedded Coder" on page 22
- "Simulink Fixed Point" on page 23
- "Simulink Report Generator" on page 23
- "Simulink Response Optimization" on page 23
- "Stateflow" on page 24
- "Stateflow Coder" on page 24

Simulink

Component-Based Modeling for Large Systems

- Ability to segment a model into multiple files, where each file is a separate model
- Ability to model, simulate, and test each design component individually before incorporating it into a system model
- Enhanced integration of your models into existing file-based configuration management and version control software
- Incremental loading and code generation
- Increased update diagram and simulation speed for large models

- Model workspaces, providing separate workspaces for storing and managing parameters and variables for each model
- Enhanced bus support for defining interfaces, supporting operations on bus signals, and specifying buses as structures for code generation

Simulink and Stateflow Integration

- Unified Model Explorer to navigate, view, create, configure, search, and modify all data, parameters, and properties of your model
- Unified simulation and code generation options
- Support for creating and saving multiple simulation and code generation configurations

Data Management and Visualization

- New data objects for defining structure, bus, custom, and alias data type objects
- Option to log data and add test points without adding blocks to the model
- I/O Manager, to connect sources and sinks to the model without adding blocks

MATLAB Language Support

- C code generation and deployment from embeddable MATLAB algorithms
- Enhanced functionality for creating M-file S-functions

Embedded Target for Motorola MPC555

- Support for MPC56x
- Stateflow and Stateflow Coder are no longer required products, although they are recommended
- Task execution profiling
- Serial download
- Scheduler option to allow temporary overruns
- CAN driver performance enhancements
- Enhanced support for CANdb
- Support for the latest toolchain versions

Embedded Target for TI C6000 DSP

> **Note** Version 2.0 of the Embedded Target for TI C6000 DSP 2.0, a Web-download version made available after Release 13SP1, includes the major new features highlighted below. The Embedded Target for TI C6000 2.1 (in Release 14) includes minor updates since Version 2.0.

- Support for the Texas Instruments C6416 DSK and C64xx families of DSPs
- Support for the Texas Instruments C6713 DSK and C67xx families of DSPs
- Continued support for Texas Instruments C6711 DSK, C6701 EVM, and C62x DSPs
- C64x DSP library
- DSP core support library and enhanced RTDX support
- Support for TMDX 326040A / PCM3003 Codec Daughter Card

Real-Time Workshop

- Incremental code generation using Model blocks
- Asynchronous events block library
- Structure support for Simulink buses
- Improved code integration
- Consolidated code generation options within Model Explorer
- External mode support for serial transport
- Code generation from embeddable MATLAB algorithms

Real-Time Workshop Embedded Coder

- Support for continuous-time systems and noninlined S-functions
- Advanced code optimizations
- Module packaging for production deployment
- Graphical custom storage class (CSC) designer
- Improved multirate support, including production-quality absolute time
- User-defined data types and more predefined CSCs

Simulink Fixed Point

- Integration of all fixed-point blocks into the Simulink library
- Increased functionality with the Signal Processing Blockset, including more than 80 blocks with fixed-point support, and easier transition from floating-point signal processing designs
- Autoscaling within Stateflow
- Improved fixed-point code generation with additional optimizations
- Ability to view fixed-point signal values in decimal, bin, or hex format
- Ability to independently verify fixed-point algorithms in MATLAB with the Fixed-Point Toolbox (now available to all Simulink Fixed Point customers)

Simulink Report Generator

- Redesigned graphical user interface
- Faster report generation
- Building scriptable setup files from the command line
- Ability to generate reports as Adobe PDF files
- New Simulink and Stateflow components, including To Workspace Plot, Stateflow Automatic Table, Stateflow Hierarchy, and Truth Table

Simulink Response Optimization

- Improved graphical user interface to set up and manage optimization problems
- Upgraded optimization routines to tune scalar, vector, or matrix parameters
- Optimization capabilities for Simulink model subsystems
- Support for user-defined reference signal matching
- Optimization capabilities for any signal in a Simulink model hierarchy
- Full support for continuous, discrete, and hybrid models
- Expanded demonstration library, including examples for electromechanical, aerospace, control system, chemical process, and DSP applications

Stateflow

- Unified Model Explorer to navigate, view, create, configure, search, and modify all data, parameters, and properties of your model
- Unified Simulink and Stateflow data and code generation options
- Auto-inheritance and parameterization of data type and size
- Scalar, vector, and matrix parameters
- Inclusion of vector and matrix I/O in graphical functions
- Support for data logging, Simulink scopes, and the I/O Manager
- State timing diagrams viewable on Simulink scopes
- Ability to include embeddable MATLAB functions within Stateflow charts

Stateflow Coder

- Unified code generation options in configuration parameters
- Improved code output unification with Real-Time Workshop
- New optimizations for code efficiency
- Ability to compile functions written using an embeddable subset of the MATLAB language into C code

Blocksets

This section highlights new features and enhancements in the following products:

- "Communications Blockset" on page 24
- "Signal Processing Blockset" on page 25

Communications Blockset

- Timing Phase Recovery library, for determining the best instant within a symbol period to sample a signal at the receiver
- Carrier Phase Recovery library, for determining the carrier phase of a baseband digital signal
- Equalizers library, for implementing linear equalizers, decision feedback equalizers, and maximum-likelihood sequence estimation equalizers

- Comm Filters library, for filtering and pulse shaping
- TCM library, for baseband trellis-coded modulation
- Utility blocks to help you compute or manipulate the delay through one or more blocks in a model
- Application-specific demos that model communications specifications such as IEEE 802.11a, cdma2000, and U. S. MIL-STD-188-110B
- Enhanced support for quantization

Signal Processing Blockset

- Speech and audio processing functionality, including LPC to/from RC, G.711 Codec, CIC, and decimation/interpolation
- New and expanded digital filter support, 4 floating point and 15 fixed-point structures
- Increased fixed-point support (requires Simulink Fixed Point) for filters, statistics blocks, the Levinson-Durbin block, and other functions
- New fixed-point dialog interface for setting output data types, including word size, binary point, rounding, overflow, and other functions
- New and improved scopes, including a new waterfall scope

New Products

The following new products have been added to the MathWorks product family since Release 13 with Service Pack 1 (R13SP1) was released. Some of these products were initially introduced in Web download form prior to Release 14.

This page also includes products that have been renamed in Release 14.

MATLAB

- **MATLAB Builder for COM** (see "MathWorks Products in Transition for Release 14" on page 4)
- **MATLAB Builder for Excel** (see "MathWorks Products in Transition for Release 14" on page 4)

Toolboxes

- **Bioinformatics Toolbox** (introduced post-R13SP1)

  The Bioinformatics Toolbox extends MATLAB to provide an integrated software environment for genome and proteome analysis. Features in this toolbox include

  - Connecting to Web accessible databases
  - Reading and converting between multiple data formats
  - Determining statistical characteristics of data
  - Manipulating and aligning sequences
  - Reading, normalizing, and visualizing microarray
  - Creating and manipulating phylogenetic tree data
  - Modeling patterns statistically in biological sequences using Hidden Markov Model (HMM) profiles
  - Interfacing with other bioinformatics software (BioPearl and BioJava)

  The Bioinformatics Toolbox is dependent upon many functions from the Statistics Toolbox including some functions only available in the latest version of the Statistics Toolbox. We recommend that you install the latest version of the Statistics Toolbox before running the Bioinformatics Toolbox.

- **Filter Design HDL Coder**

  Filter Design HDL Coder is a hardware description language (HDL) code generator for fixed-point filters designed with MATLAB and the Filter Design Toolbox. The Filter Design HDL Coder generates efficient synthesizable VHDL or Verilog code from quantized filters and creates test benches for quickly simulating, testing, and verifying the generated filter code. The generated code adheres to a clean HDL coding style that enables architects and designers to quickly address customizations, as needed. The test bench feature increases confidence in the correctness of the generated code and saves potential time spent on test bench implementation.

- **Fixed-Point Toolbox**

  The Fixed-Point Toolbox provides fixed-point data types in MATLAB and enables algorithm development by providing fixed-point arithmetic. The Fixed-Point Toolbox enables you to create the following types of objects:

  - `fi` — Defines a fixed-point numeric object in the MATLAB workspace. Each `fi` object is composed of value data, a `fimath` object, and a `numerictype` object.
  - `fimath` — Defines the arithmetic attributes work with `fi` objects
  - `fipref` — Defines the display attributes for `fi` objects
  - `numerictype` — Defines the data type and scaling attributes of `fi` objects
  - `quantizer` — Quantizes data sets

- **Genetic Algorithm and Direct Search Toolbox** (introduced post-R13SP1)

  The Genetic Algorithm and Direct Search Toolbox is a collection of functions that extend the capabilities of the Optimization Toolbox and the MATLAB numeric computing environment. The Genetic Algorithm and Direct Search Toolbox includes routines for solving optimization problems using

  - Genetic algorithm
  - Direct search

  These algorithms enable you to solve a variety of optimization problems that lie outside the scope of the standard Optimization Toolbox.

- **Link for ModelSim®**

  Link for ModelSim is a cosimulation interface that integrates MathWorks tools into the electronic design automation (EDA) workflow for field programmable gate array (FPGA) and application-specific integrated circuit

(ASIC) development. The interface provides a fast bidirectional link between the Mentor Graphics hardware definition language (HDL) Simulator, ModelSim SE/PE, and MATLAB and Simulink for direct hardware design verification and cosimulation. The integration of these tools allows users to apply each product to the tasks it does best:

- ModelSim—hardware modeling in HDL and simulation
- MATLAB—numerical computing, algorithm development, and visualization
- Simulink—simulation of system-level designs and complex models

The Link for ModelSim interface consists of MATLAB functions and ModelSim commands for establishing the communication links between ModelSim and the MathWorks products. In addition, a library of Simulink blocks is available for including ModelSim HDL designs in Simulink models for cosimulation.

- **OPC Toolbox**

  The OPC Toolbox is a collection of M-file functions and MEX-file dynamic link libraries (DLLs) built on the MATLAB technical computing environment. The toolbox provides you with these main features:

  - A framework for interacting with one or more OPC servers directly from MATLAB.
  - Compliance with the OPC Foundation Data Access Standard, version 2.05a.
  - Event-driven interaction with OPC servers.
  - An object-oriented hierarchical structure for managing connections to OPC servers, grouping signals (*tags*), and communicating with servers in a flexible and efficient way.
  - The ability to log data from OPC Data Access servers without the need for Historical Data Access support on the OPC server.
  - An intuitive graphical user interface for browsing OPC servers, creating OPC Toolbox objects and initiating logging tasks.

- **RF Toolbox**

  The RF Toolbox enables you to create and combine RF circuits for simulation in the frequency domain with support for both power and noise. You can read, write, analyze, combine, and visualize RF network parameters. Functions enable you to work directly with your own network parameter data or with data from files.

Simulink

- **Embedded Target for TI C2000 DSP Platform** (introduced post-R13SP1)

  The Embedded Target for the TI TMS320C2000 DSP Platform 1.0 is a new product from The MathWorks that enables you to create, simulate, and download executable code to your C2000 DSP target board. The following eZdsp DSP board kits from Spectrum Digital are supported:

  - TMS320F2812 eZdsp DSK — the F2812eZdsp DSP Starter Kit
  - TMS320LF2407 eZdsp DSK — the LF2407eZdsp DSP Starter Kit

- **Simulink Accelerator** (see "MathWorks Products in Transition for Release 14" on page 4)

- **Simulink Control Design**

  Simulink Control Design provides tools for the linearization of control systems and physical models in Simulink. A graphical user interface simplifies the tasks of specifying operating conditions, linearizing the model, and analyzing the results. Linearized Simulink models often facilitate system analysis and compensator design. This is useful in many industries and applications, including

  - Aerospace: flight control, guidance, navigation
  - Automotive: cruise control, emissions control, transmission
  - Equipment manufacturing: motors, disk drives, servos

  Simulink Control Design improves upon previous Simulink linearization tools by providing more options for computing operating conditions and allows open loop analysis without the removal of feedback loops. It also includes a linearization inspector and debugger. Linearization projects are easier to manage with the new Control and Estimation Tools Manager. Furthermore, Control System Toolbox features, such as the LTI Viewer, are integrated with the Simulink Control Design to improve control system analysis and design.

- **Simulink Fixed Point** (see "MathWorks Products in Transition for Release 14" on page 4)

- **Simulink Parameter Estimation**

  Simulink Parameter Estimation is a tool for estimating parameters and initial states of a Simulink model using empirical input/output data.

  This tool provides a graphical user interface (GUI) that simplifies the mechanics of the estimation process. There is also a command line interface if you do not want to use the GUI.

- **Simulink Response Optimization** (see "MathWorks Products in Transition for Release 14" on page 4)

- **Simulink Verification and Validation** (see "MathWorks Products in Transition for Release 14" on page 4)

Blocksets

- **RF Blockset**

  The RF Blockset is a tool for design, analysis, and simulation of RF communications systems. It uses baseband equivalent behavioral modeling to model and analyze RF systems in the time domain.

  The RF Blockset enables you to assemble complex RF systems from libraries of RF components such as ladder filters, transmission lines, black box elements, amplifiers and mixers. You can include Simulink, Signal Processing Blockset, and Communications Blockset blocks in your model, as well as blocks from other MathWorks blocksets.

- **Signal Processing Blockset** (see "MathWorks Products in Transition for Release 14" on page 4).

Supported Platforms

The following platforms are supported for Release 14:

- Windows 2000 (Service Pack 3 or 4)
- Windows NT 4.0 (Service Pack 5 or 6a)
- Windows XP
- Linux ix86 2.4.x, glibc 2.2.5
- Sun Solaris 2.8 and 2.9
- HPUX 11.0 and 11.i
- Mac OS X 10.3.2

Note For the most up-to-date, and more detailed, information about supported platforms and system requirements, see "Planned Release 14 System Requirements" on the MathWorks Web site: `http://www.mathworks.com/support/sysreq/current_release/all.html`.

Sun Solaris Runtime Libraries

MATLAB dynamically links against the Solaris C++ Runtime Library, which must reside on the same machine.

To determine whether this library is already installed, type the following line in a UNIX shell.

```
ls -l /usr/lib/libCstd.so.*
```

If you get a `No match` response, then you need to install it from your Solaris system CD.

256 Color Displays No Longer Supported

For all supported platforms, MATLAB requires a 16-bit or higher graphics adapter:

- On Windows: 16-, 24-, or 32-bit OpenGL graphics adapter
- UNIX and Macintosh: 16-bit graphics or higher adaptor and display (24 bit recommended)

MAT-File Compatibility

In Release 14, MATLAB 7.0 writes character and figure data to MAT-files using Unicode encoding by default. Unicode encoded MAT-files are not readable by earlier versions of MATLAB. Thus, if you save data to a MAT-file using MATLAB 7.0, and you intend to load this MAT-file into an earlier release of MATLAB, you must override the Unicode default during the save.

For information on how to override this default, see "Making Release 14 MAT-files Readable in Earlier Versions" in the External Interface/API Upgrade Issues section of the online MATLAB 7.0 Release Notes.

Accessibility Notes

Release 14 includes a number of modifications to make our products more accessible to all users.

For installation instructions relating to accessibility support, see "Installation Notes for Accessibility Support" on page 41.

Products Updated

The MathWorks has made general modifications to make its products more accessible. Particular emphasis was placed on the accessibility of following products/features for Release 14:

- The product installation process
- MATLAB
- Simulink
- Control System Toolbox
- Curve Fitting Toolbox
- Optimization Toolbox
- Signal Processing Toolbox
- Statistics Toolbox
- Excel Link
- MATLAB Compiler

Summary of Accessibility Support

For Release 14, the focus was on the following kinds of accessibility support for blind and visually impaired users:

- Support of screen readers and screen magnifiers, as described in "Assistive Technologies" on page 36
- Command-line alternatives for most graphical user interface (GUI) options
- Keyboard access to GUI components
- A clear indication of the current cursor focus
- Information available to assistive technologies about user interface elements, including the identity, operation and state of the element

- Nonreliance on color coding as the sole means of conveying information about working with a GUI
- Consistent meaning for bit-mapped images used in GUIs
- Noninterference with user-selected contrast and color selections and other individual display attributes, as well as noninterference for other operating system-level accessibility features
- HTML documentation that is accessible to screen readers

The MathWorks believes that its products do not rely on auditory cues as the sole means of conveying information about working with a GUI. However, if you do encounter any issues in this regard, please report them to the MathWorks Technical Support group.

```
http://www.mathworks.com/support/
```

Keyboard access to the user interface includes support for "sticky keys," which allow you to press key combinations (such as **Ctrl + C**) sequentially rather than simultaneously.

The MathWorks software does not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.

Organization of the Accessibility Notes

These notes about product accessibility cover the following topics:

- "Assistive Technologies" on page 36
- "Troubleshooting" on page 36
- "Documentation" on page 38

If you are using a screen reader, such as JAWS, also see "Installation Notes for Accessibility Support" on page 41.

Assistive Technologies

Note For Release 14, to take advantage of accessibility support features, you must use MathWorks products on a Microsoft Windows platform.

Tested Assistive Technologies

For Release 14, The MathWorks has tested the following assistive technologies:

- JAWS 4.5 and 5.0 for Windows (screen reader) from Freedom Scientific
- Built-in accessibility aids from Microsoft, including the Magnifier and "sticky keys"

Use of Other Assistive Technologies

Although The MathWorks has not tested other assistive technologies, such as other screen readers or ZoomText Xtra (screen magnifier) from Ai Squared, The MathWorks believes that most of the accessibility support built into its products should work with most assistive technologies that are generally similar to the ones tested.

If you choose to experiment with using other assistive technologies than the ones tested, The MathWorks is very interested in hearing from you about your experiences.

Troubleshooting

This section identifies work-arounds for some possible issues you may encounter related to accessibility support in MathWorks products.

JAWS Stops Speaking

When there are many desktop components open, JAWS with MATLAB sometimes just stops speaking.

If this happens, close most of the desktop components, exit MATLAB, and restart.

Command Output Not Read

In the MATLAB Command Window, JAWS does not automatically read the results of commands.

To read command output, first select **File** --> **Preferences** --> **Command Window**, select the option **Use arrow keys for navigation instead of command history recall**, and click **OK**. Then, in the Command Window, press the arrow keys to move to the command output and use JAWS keystrokes to read the output.

With this preference set, you cannot use arrow keys to recall previous commands. Instead use the following key bindings:

- Windows key bindings:
  - Previous history: **CTRL-up arrow**
  - Next history: **CTRL-down arrow**
- Emacs key bindings:
  - Previous history: **CTRL-p**
  - Next history: **CTRL-n**

To return to using the up and down arrow keys to recall previous commands, clear the preference.

Menus of Some GUIs Are Treated As Check Boxes

For some GUIs, for example, from the figure window, all menus are treated by JAWS as though they are check boxes, whether or not they actually are.

You can choose a menu item for such GUIs by using accelerator keys (e.g., **Ctrl+N** to select **New Figure**), if one is associated with a menu item. You can also use mnemonics for menu navigation (e.g., **Alt+E**).

Note that check boxes that you encounter by tabbing through the elements of a GUI are handled properly.

Text in Some GUIs Is Ignored

For some dialog boxes, JAWS reads the dialog box title and any buttons, but ignores any text in the dialog box.

Also, in parts of some GUIs, such as some text-entry fields, JAWS ignores the label of the field. However, JAWS will read any text in the text box.

Documentation

Documentation is available in HTML format for all MathWorks products that are included in Release 14.

Accessing the Documentation

To access the documentation with a screen reader, go to the Release 14 documentation area on the MathWorks Web site at

```
http://www.mathworks.com/access/helpdesk/help/helpdesk.html
```

Navigating the Documentation

Note that the first page that comes up is a listing of the products. To get the documentation for a specific product, click on the link for that product.

The table of contents is in a separate frame. You can use a document's table of contents to navigate through the sections of that document.

Because you will be using a general Web browser, you will not be able to use the search feature included in the MATLAB Help browser. You will have access to an index, although the index will be for the specific document you are using; the cross-product index of the MATLAB Help browser is not available when you are using a general Web browser.

Products

The documentation for all products except the LMI Control Toolbox is in HTML and can be read with a screen reader. The following product documentation has been modified (as described below) to enhance its accessibility for people using a screen reader such as JAWS:

- MATLAB (many sections, but not the function reference pages)
- Excel Link
- Optimization Toolbox
- Statistics Toolbox
- Signal Processing Toolbox

Documentation Modifications. Modifications to the documentation include the following:

- Describing illustrations in text (either directly or via links)
- Providing text to describe the content of tables (as necessary)
- Restructuring information in tables to be easily understood when a screen reader is used
- Providing text links in addition to any image mapped links

Equations. Equations that are integrated in paragraphs are generally explained in words. However, most complex equations that are represented as graphics are not currently explained with alternative text.

Installation Notes

To install Release 14 on a Windows or UNIX system, follow the instructions in the Release 14 installation guide for that platform.

Release 14 introduces some new features of the MathWorks Installer program, including

- New **Typical** and **Custom** installation options
- New method of delivering documentation

Release 14 also introduces product modifications to make our products more accessible to all users, including visually impaired and blind users. "Accessibility Notes" on page 34 describes these modifications. "Installation Notes for Accessibility Support" on page 41 discusses some installation issues involved in setting up your environment to work with assistive technologies.

Typical and Custom Installations

The MathWorks Installer program on Windows platforms provides two paths through the installation process: a path for typical installations and a path for custom installations.

A typical installation is the simplest type of installation to perform. In this type of installation, the installer installs all the products your license authorizes you to install. The installer does not present a list of products from which you can pick and choose. The installer installs the products in a default directory, but you can specify a different installation directory.

The custom installation option lets you select the products you want to install and provides access to several other installation options that are not accessible in a typical installation. For example, in a custom installation, you can choose to set the permission of all of the installed files to read only.

Installing the Online Documentation

The MathWorks Installer program always installs the online HTML documentation associated with each product it installs. The installer no longer includes options to install documentation. Because the online documentation files are stored in compressed form in Java Archive (JAR) files, they take up less disk storage than in previous releases.

> **Note** Because the documentation files are shipped in compressed form, you can no longer view the help directly from the installation CDs.

The Release 14 installation CDs do not include PDF documentation. The PDF documentation is available from the MathWorks Web site at

```
http://www.mathworks.com/access/helpdesk/help/helpdesk.html
```

For the PDF version of a manual, click on the product in the list of products to display its Roadmap page; then see "Printing the Documentation Set."

Installation Notes for Accessibility Support

> **Note** If you are not using a screen reader such as JAWS, you can skip this section.

This section describes the installation process for setting up your MATLAB environment to work effectively with JAWS.

Use the regular MATLAB installation script to install the products for which you are licensed. The installation script has been modified to improve its accessibility for all users.

> **Note** Java Access Bridge 1.1 is installed automatically when you install MATLAB.

After you complete the product installation, there are some additional steps you need to perform to ensure JAWS works effectively with MathWorks products.

Setting Up JAWS
Make sure that JAWS is installed on the machine. If it is, there is probably a shortcut to it on the Windows desktop.

Setting up JAWS involves these tasks:

1 Add the Access Bridge to your path, if necessary.

2 Create the `accessibility.properties` file.

These tasks are described in more detail below.

(For Networked Installations Only) Add Access Bridge to Your Path. If you are running MATLAB in a networked installation environment (that is, if the MATLAB Installer was not run on your machine), you need to take the following steps to add Access Bridge to your Windows path:

1 Select the **Control Panel** from **My Computer**.

2 From the **Start** button, select **Settings**, next select **Control Panel**, and then **System**.

3 In the **System Properties** dialog box, select the **Advanced** tab.

4 Click **Environment Variables**.

5 Under the **System variables**, select the **Path** option.

6 Select the **Edit** option.

7 To the start of the `Path` environment variable, add the directory that contains `matlab.exe`; for example:

    C:\matlabr14\bin\win32;

Be sure to include that semicolon between the end of this directory name and the text that was already there.

8 Click **OK** three times.

9 If JAWS is already running, exit it and restart it. JAWS must be started with these path changes in effect to work properly with MATLAB.

Create the accessibility.properties File.

1 Create a text file that contains the following line.

```
assistive_technologies=com.sun.java.accessibility.AccessBridge
```

2 Use the filename `accessibility.properties`.

3 Move the `accessibility.properties` file into

```
$(matlabroot)\sys\java\jre\win32\jre1.4.2\lib\
```

Testing

Once you have installed JAWS and set up your environment as described above, you should test out whether JAWS is working properly:

1 Start JAWS.

2 Start MATLAB.

JAWS should start talking to you as you select menu items and work with the MATLAB user interface in other ways.

JAWS Pronunciation Dictionary

As a convenience, the MathWorks provides a pronunciation dictionary for JAWS. This dictionary is in a file called `MATLAB.jdf`.

During the installation, the file will be copied to your system under the MATLAB root directory at `sys\Jaws\matlab.jdf`.

To make use of the dictionary, you must copy it to the `\SETTINGS\ENU` folder located beneath the JAWS root installation directory.

You need to restart JAWS and MATLAB for the settings to take effect.

Quick Access to Product-Specific Release Notes

Below are links to the product-specific release notes for each MathWorks product. If a product is not listed below, it has not changed significantly since Release 11.

Note Products with an asterisk (*) include products that have been updated for Release 14 and/or whose release notes include new information relating to Release 14. Refer to release notes for products that do *not* have an asterisk only if you are upgrading from a release prior to Release 13SP1.

MATLAB	
MATLAB*	Excel Link*
MATLAB Builder for COM*	MATLAB Builder for Excel*
MATLAB COM Builder (now named MATLAB Builder for COM)	MATLAB Excel Builder (now named MATLAB Builder for Excel)
MATLAB Compiler*	MATLAB Report Generator*
MATLAB Web Server	

Toolboxes	
Bioinformatics Toolbox*	Communications Toolbox*
Control System Toolbox*	Curve Fitting Toolbox
Data Acquisition Toolbox*	Database Toolbox*
Datafeed Toolbox*	Filter Design HDL Coder*
Filter Design Toolbox*	Financial Derivatives Toolbox*

Toolboxes (Continued)

Financial Time Series Toolbox	Financial Toolbox*
Fixed-Income Toolbox*	Fixed-Point Toolbox*
Fuzzy Logic Toolbox (no release notes)	GARCH Toolbox*
Genetic Algorithm and Direct Search Toolbox*	Image Acquisition Toolbox*
Image Processing Toolbox*	Instrument Control Toolbox*
Link for Code Composer Studio Development Tools*	Link for ModelSim*
LMI Control Toolbox (no release notes)	Mapping Toolbox*
Model-Based Calibration Toolbox*	Model Predictive Control Toolbox*
Mu-Analysis and Synthesis Toolbox (no release notes)	Neural Network Toolbox
OPC Toolbox*	Optimization Toolbox*
Partial Differential Equation Toolbox (no release notes)	RF Toolbox*
Robust Control Toolbox (no release notes)	Signal Processing Toolbox*
Spline Toolbox*	Statistics Toolbox*
Symbolic Math Toolbox*	System Identification Toolbox
Virtual Reality Toolbox*	Wavelet Toolbox*

Simulink	
Simulink*	Embedded Target for Infineon C166 Microcontrollers*
Embedded Target for Motorola HC12*	Embedded Target for Motorola MPC555*
Embedded Target for OSEK/VDX *	Embedded Target for TI C2000 DSP*
Embedded Target for TI C6000 DSP*	Real-Time Windows Target*
Real-Time Workshop*	Real-Time Workshop Embedded Coder*
Requirements Management Interface (incorporated into new Simulink Verification and Validation*)	SimMechanics*
SimPowerSystems*	Simulink Accelerator*
Simulink Control Design*	Simulink Fixed Point*
Simulink Parameter Estimation*	Simulink Performance Tools (incorporated in new Simulink Accelerator* and Simulink Verification and Validation* products)
Simulink Report Generator*	Simulink Response Optimization*
Simulink Verification and Validation*	Stateflow and Stateflow Coder*
xPC Target*	xPC TargetBox*

Blocksets	
Aerospace Blockset	CDMA Reference Blockset
Communications Blockset*	Dials & Gauges Blockset*
DSP Blockset (now called Signal Processing Blockset*)	Fixed-Point Blockset (incorporated into new Simulink Fixed Point)
Nonlinear Control Design Blockset (renamed Simulink Response Optimization*)	RF Blockset*
Signal Processing Blockset*	