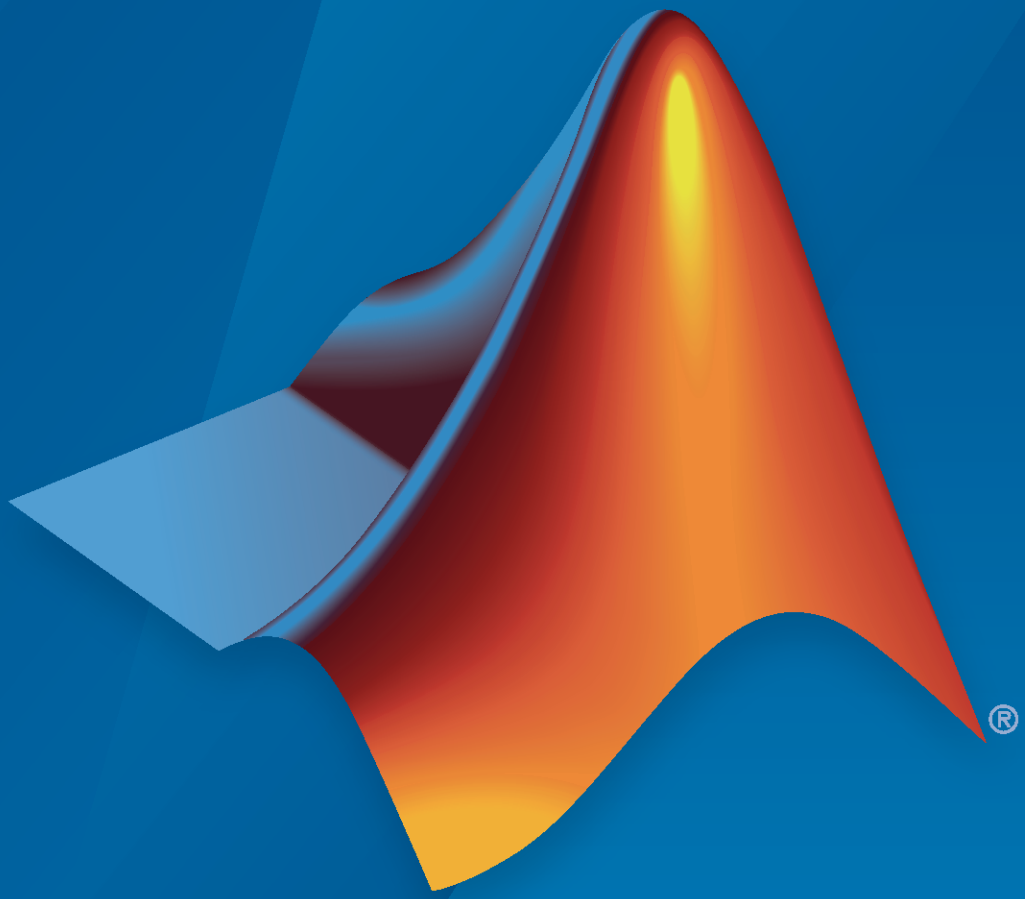
Simscape™ Multibody™ Link Release Notes



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Simscape™ Multibody™ Link Release Notes

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R2020a

Version: 7.1

Bug Fixes

R2019b

Version: 7.0

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R2019a

Version: 6.1

Bug Fixes

R2018b

Version: 6.0

Bug Fixes

R2018a

Version: 5.2

Bug Fixes

R2017b

Version: 5.1

New Features

Bug Fixes

Autodesk Inventor CAD Joint Translation: Export joints defined in CAD assembly using Simscape Multibody Link

Export Autodesk Inventor CAD assembly models containing joint definitions. All joint types are supported: `Rigid`, `Rotational`, `Slider`, `Cylindrical`, `Planar`, and `Ball`. Previously, only assembly constraints were supported. For more information, see CAD Translation and Constraints and Joints.

CAD Export to Simscape Multibody First Generation Software Deprecated

The Simscape Multibody Link now exports CAD assemblies only in an XML format compatible with Simscape Multibody Second Generation software. All models imported from such XML files are created from second-generation blocks—those accessible by entering the command `smlib` at the MATLAB® command prompt. The plug-in no longer provides the option to export in an XML file compatible with first-generation blocks—those accessible by entering the command `mech_lib` at the MATLAB command prompt. You can continue to import older XML files originally meant for translation into first-generation models using the `mech_import` function.

R2017a

Version: 5.0

Bug Fixes

R2016b

Version: 4.9

Bug Fixes

R2016a

Version: 4.8

New Features

Bug Fixes

SimMechanics Link renamed to Simscape Multibody Link

The SimMechanics™ Link CAD plug-in is now named Simscape Multibody Link. The plug-in enables you to export a CAD assembly from a supported CAD application into what is now named Simscape Multibody software.

R2015b

Version: 4.7

New Features

Bug Fixes

STEP file support

The SimMechanics Link plug-in now supports STEP files. You can export part geometries in your choice of STL or STEP files. STEP is the new default format of part geometry files.

R2015a

Version: 4.6

Bug Fixes

R2014b

Version: 4.5

Bug Fixes

R2014a

Version: 4.4

No New Features or Changes

R2013b

Version: 4.3

No New Features or Changes

R2013a

Version: 4.2

No New Features or Changes

R2012b

Version: 4.1

New Features

CAD export into SimMechanics second-generation models

SimMechanics Link introduces CAD export for SimMechanics second-generation models. SimMechanics Link generates a SimMechanics Import XML file that contains CAD assembly structure and parameters in SimMechanics second-generation format. You can choose between SimMechanics first- and second-generation formats.

SimMechanics Link supports CAD export in SimMechanics second-generation format from the following CAD platforms:

- Autodesk Inventor®
- Creo® (Pro/Engineer®)
- SolidWorks®

R2012a

Version: 4.0

No New Features or Changes

R2011b

Version: 3.2.3

No New Features or Changes

R2011a

Version: 3.2.2

No New Features or Changes

R2010b

Version: 3.2.1

No New Features or Changes

R2010a

Version: 3.2

New Features

Export of Reference Coordinate Systems from Supported CAD Assemblies

You can now export reference coordinate systems that you insert and define in your CAD assemblies into Physical Modeling XML. When you import this XML file into a generated SimMechanics model, these coordinate systems appear on the corresponding Body blocks.

Note Export of reference coordinate system is not supported for all CAD platforms supported by SimMechanics Link software. See the *SimMechanics Link Reference*.

New Example

Exporting Reference Coordinate Systems from CAD Assemblies

The example User Added Coordinate Systems explains how to export optional reference coordinate systems from a CAD assembly that represents a gear set. The example assembly requires SolidWorks.

R2009b

Version: 3.1.1

New Features

Improved and Expanded Documentation

Installation and Linking Documentation

The documentation for downloading, installing, and linking SimMechanics Link software has been expanded and improved. See Installing and Linking SimMechanics Link Software.

Application Programming Interface Documentation

The documentation for the SimMechanics Link application programming interface (API) has been expanded and improved. You use the API to create custom links from SimMechanics Link software to external applications. This documentation includes:

- The API tutorial chapter, Custom Linking to CAD and Other External Applications
- The API Reference, which contains reference information on every function, data type, and object handle class in the API.

R2009a

Version: 3.1

New Features

Autodesk Inventor CAD Platform Now Supported

SimMechanics Link now directly supports the Autodesk® Inventor® CAD platform for exporting assemblies into Physical Modeling XML. See the Linking and Using the Autodesk Inventor Add-In reference chapter.

Pro/ENGINEER CAD Translation Now Supported on 64-Bit Windows

Direct SimMechanics Link support for these CAD platforms and operating systems has expanded.

CAD Platform	Operating Systems
Autodesk Inventor	Windows® 32-bit and 64-bit
Pro/ENGINEER®	Windows 32-bit and 64-bit
SolidWorks	Windows 32-bit and 64-bit

Web Video Example Now Available

A new Web-based video demonstrates how to translate and retranslate CAD assemblies into SimMechanics models, using SimMechanics Link software. See Watching a Demo.

Pro/ENGINEER CAD Translation Case Study

The CAD translation chapter now contains a case study demonstrating assembly export and re-export, along with model import and update. The study uses SimMechanics and SimMechanics Link software, together with Pro/ENGINEER, and models a double pendulum, subsequently modified to a triple pendulum. The study illustrates how you can update an existing generated CAD-based model with successive changes to the original CAD assembly.

R2008b

Version: 3.0

New Features

Compatibility Considerations

Introduction to SimMechanics Link Utility

The new SimMechanics Link utility requires only MATLAB, but is intended for use with SimMechanics software. Separate product documentation and examples are provided for this utility.

The SimMechanics Link utility generates Physical Modeling XML files from external applications such as computer-aided design (CAD) platforms. These Physical Modeling XML files can be used with SimMechanics software to generate SimMechanics models representing mechanical systems.

SimMechanics Link Version Numbers

The SimMechanics Link version numbers are identical, for each MATLAB release, to the parallel SimMechanics version numbers. The versions begin with 3.0.

SimMechanics Link Operating System and CAD Platform Support

The SimMechanics Link utility directly supports these CAD platforms on these operating systems.

CAD Platform	Operating Systems
Pro/ENGINEER	Windows 32-bit
SolidWorks	Windows 32-bit and 64-bit

Custom Interfaces for Combinations Not Directly Supported

For all other combinations of operating systems and CAD platforms (or other external applications), you must write a custom interface to connect to the SimMechanics Link utility. Such custom interfaces are supported on all operating systems that support MATLAB.

See Custom Linking to CAD and Other External Applications in the *SimMechanics Link User's Guide*.

Using SimMechanics Link Utility with SimMechanics Software

The SimMechanics command reads Physical Modeling XML files mech_import generated by the SimMechanics Link utility to generate SimMechanics models of machines with externally specified data.

Relationship of SimMechanics Link Utility and CAD-to-SimMechanics Translators

The SimMechanics Link utility replaces the obsolete CAD-to-SimMechanics translators, continuing to support those CAD platforms already supported, Pro/ENGINEER and SolidWorks.

Compatibility Considerations

The SimMechanics Link utility cannot update SimMechanics models that were generated from the old CAD-to-SimMechanics translators. The simplest workaround is to start with the original CAD assembly, export a new Physical Modeling XML file, and import it to generate a new model.