Application example • 03/2017

Automated creation of the SIMIT simulation model with COMOS planning and engineering data

SIMIT V9.0 SP1, COMOS V10.2

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1 Introduction

1.1 Aim of the Application Example

Digitization is currently ubiquitous and inextricably linked to the generation and processing of information. The construction of a fully-integrated data landscape is one of the most important prerequisites for the digital process creation.

This application example is a “best practice” example and shows you how to import COMOS planning data into SIMIT and automatically create your simulation model. Optimized engineering workflows in automation and the shortest possible set-up and commissioning times for new production lines enable fast and high-quality products on the market.

This application example gives you the first insight into how you can implement this requirement with SIMIT and COMOS.

The main focus is on the COMOS plug-in "SIMIT interface" and the SIMIT function "Generic import" for automatic model creation.

For additional information on SIMIT and COMOS, refer to: Section 3 and 4 of this document.
1.2 Modes of operation and benefits of the COMOS-SIMIT interface

Overview

From SIMIT V9.0 onwards, you can import the planning and engineering data from COMOS and automatically create a simulation model in SIMIT. By adopting existing planning and engineering data as well as libraries with ready-for-use components, a rapid and economical commissioning is guaranteed. The data exchange between the systems is XML-based and works as follows:

1. The libraries in SIMIT with the corresponding simulation components are exported and imported into COMOS.
2. The imported SIMIT components are linked in COMOS with the corresponding COMOS base objects.
3. The COMOS planning data are exported and imported into SIMIT.
4. The simulation models are generated automatically from the COMOS planning data.
1 Introduction

1.2 Modes of operation and benefits of the COMOS-SIMIT interface

Benefits

Automation projects are usually tested at the end of the engineering process. It is only if and when all equipment and automation components are available that a detailed test of the projects on a real plant is possible.

With COMOS and SIMIT, you can simulate your project at the beginning of the engineering process. This means that you are already checking your project in a phase in which not all components are available yet.

The so-called virtual commissioning offers the following benefits:

- Higher engineering quality through simulation and virtual commissioning
- Reduced commissioning times, overall project costs and risks
- Reduced expenditure in constructing simulations and faster return on investment
- Maximum reutilization of data from plant design
- Testing without using material or involving personnel

All in all, the virtual commissioning leads to a significant reduction in the overall costs of a project. In addition, project planning can be reliably complied with and the system can be put into operation on schedule or even earlier.
1.3 Sample project

Overview

In the Zip file "109740344_COMOS_SIMIT_Interface_app_proj_iDB.zip" you can find a preconfigured COMOS project based on the following application examples:

- "Controlled plant engineering from the outset with COMOS FEED"
  

- "Fast and easy generation of Piping and Instrumentation Diagrams with COMOS P&ID using a practical example"
  

Note

You can find these application examples and a lot more information on the topic COMOS and SIMIT on the COMOS topic page:

[www.siemens.com/onlinesupport/comos](http://www.siemens.com/onlinesupport/comos)

For information on further helpful articles, please refer to Section 3 and 4 of this document.

Based on these project data from the Basic and Detail Engineering phase, you export the simulation components from the SIMIT library. You import these components into COMOS and then link them to the corresponding planning objects from the preconfigured COMOS project.

To automatically generate the simulation model in SIMIT, export the data and import it into SIMIT.

The following fundamental instructions and modes of operation are described:

1. Create SIMIT project
2. Read-in SIMIT components into COMOS
3. Creating and configuring component mapping
4. Export planning and engineering data from COMOS
5. Import and automatic modeling in SIMIT

Note

The present application example is for illustrative purposes only and is not a fully worked out solution to implement in your plant.
1 Introduction

1.4 Components used

1.4 Components used

Software components

The Application Example has been created with the following software components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
<th>MLFB/Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMOS 10.2</td>
<td>1</td>
<td>Your contact for sales and service can be found on the COMOS topic page:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="http://www.siemens.com/onlinesupport/comos">www.siemens.com/onlinesupport/comos</a></td>
</tr>
<tr>
<td>SIMIT V9.0 SP1 ULTIMATE</td>
<td>1</td>
<td>6DL5260-0CX58-0YA5</td>
</tr>
<tr>
<td>SIMIT V9.0 SP1 CHEM-BASIC LIBRARY</td>
<td>1</td>
<td>6DL5260-1CX58-2YB5</td>
</tr>
</tbody>
</table>

Note

If you do not have a valid SIMIT license, you cannot carry out the application example.

Further information and contact details can be found on the SIMIT product page.

www.siemens.com/simit

For information on further helpful articles, please refer to Section 3 and 4 of this document.

Sample files and project

The following table contains all the files used in this application example.

<table>
<thead>
<tr>
<th>Component</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>109740344_COMOS_SIMIT_Interface_app_proj_iDB.zip</td>
<td>Pre-configured sample project</td>
</tr>
<tr>
<td>109740344_COMOS_SIMIT_Interface_app_docu_en.pdf</td>
<td>This document</td>
</tr>
</tbody>
</table>

Basic information regarding language settings

The languages of the operating system, COMOS and SIMIT must be identical for the implementation of the application example. Set the languages accordingly.

For example, in German the comma is used as a decimal separator and in English as a thousands separator. If the settings are different, this may cause values to be displayed incorrectly.
2 Configuration of the sample project

1.4 Components used

2 Configuration of the sample project

Overview

The example project is based on the following configuration steps:

Table 2-1

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Creating a SIMIT project</td>
<td>2.1</td>
</tr>
<tr>
<td>2.</td>
<td>Opening the COMOS database and example project</td>
<td>2.2</td>
</tr>
<tr>
<td>3.</td>
<td>Adding SIMIT components</td>
<td>2.3</td>
</tr>
<tr>
<td>4.</td>
<td>Component mapping</td>
<td>2.4</td>
</tr>
<tr>
<td>5.</td>
<td>Exporting SIMIT</td>
<td>2.5</td>
</tr>
<tr>
<td>6.</td>
<td>Automatic model generation</td>
<td>2.6</td>
</tr>
<tr>
<td>7.</td>
<td>(Optional) Exporting SIMIT simulation components</td>
<td>2.7</td>
</tr>
</tbody>
</table>
2.1 Creating a SIMIT project

This section describes how to create the SIMIT project in which you will later carry out the automatic modeling.

Procedure

1. Open SIMIT V9.0 SP1.
   Open SIMIT in the “Open existing project” of the portal view.
   (“Open existing project”) open.

   Figure 2-1

2. Create a new project.
   Click on menu item “Create new project”.
   (“Create new project”).
   The “Create new project” window is shown.

3. Enter a suitable name in the “Project name” field.
   (e.g. "COMOS_SIMIT_Interface").

4. In the "Target folder" field, enter the folder in which you want to save the project.

5. Optional:
   Enter information about the author and the project in the "Author" and "Comment" fields.

6. Click on the "Create" button.
   The project is created and the “Getting Started” view opens.
2 Configuration of the sample project
2.1 Creating a SIMIT project

7. Open the created SIMIT project in the "Project view". To do this, click on the "Project view" button.
2 Configuration of the sample project

2.1 Creating a SIMIT project

You can edit and configure the SIMIT project in "Project view".

8. Save the project and close SIMIT.

Figure 2-4

Result

You have created a SIMIT project.
2 Configuration of the sample project
2.2 Opening the COMOS database and example project

2.2 Opening the COMOS database and example project

This section describes how to open the supplied COMOS database and the pre-configured COMOS example project belonging to it.

Procedure

1. Unpack the supplied zip file "109740344_COMOS_SIMIT_Interface_app_proj_iDB.zip".
   This file contains the COMOS database with the preconfigured example project (based on the iDB).

2. Open COMOS.

![Figure 2-5 COMOS menu bar](https://example.com/comos_menu_bar.png)

**Note**

In the COMOS manual "COMOS Platform Getting Started" you can look up further useful information on basic COMOS operation.


For information on further helpful articles, please refer to Section 3 and 4 of this document.
2 Configuration of the sample project

2.2 Opening the COMOS database and example project

3. In the COMOS menu bar, click on the "Open database" button. The "Open database" dialog opens.

4. Click on the “Browse” button. A dialog opens.

Figure 2-6

5. Select the supplied COMOS database in the dialog: "109740344_COMOS_SIMIT_Interface_application_example_project_iDB.mdb".

6. Click on the "Open" button.

Figure 2-7

7. Click on the “User name” box. A dropdown list opens.

8. Select "@SETUP".

Figure 2-8
2 Configuration of the sample project
2.2 Opening the COMOS database and example project

9. Click on the "OK" button.

Figure 2-9

COMOS is now connected to the database. Next, you must open the relevant project in the database (there is only one project present in the supplied database).

10. In the COMOS menu bar, click on the button "Open project".

11. Click on the button, to open the subordinate workspaces of the “iDB_P01” project.

12. Double-click on the working layer "COMOS SIMIT Interface app (preconfigured project)" in order to open the preconfigured example project.

Figure 2-10

Result

You have opened the preconfigured example project in COMOS and can continue with the configuration.
2 Configuration of the sample project
2.2 Opening the COMOS database and example project

Note

The application example is carried out in one working layer. This allows you to re-establish the original state of the source database at any time.

Working layers offer even further advantages. The working layer model of COMOS does no form part of this application example. You can find further information on this in the following manuals:

- "COMOS Platform Getting Started", Section 2 "Create and open working layers"

- "COMOS Platform Administration" in Chapter 3 "Administration of projects and working layers"

For information on further helpful articles, please refer to Section 3 and 4 of this document.
2.3 Adding SIMIT components

This Section describes how to import a SIMIT basic component into COMOS. In this application example, the following SIMIT basic component "Valve ..." must be imported from the SIMIT library “CHEM-BASIC”.

**Note**
The SIMIT basic components that are created with the installation can be imported directly into the SIMIT installation path in COMOS.

C:\ProgramFiles(x86)\SIEMENS\Automation\SIMIT\SIMIT SF\components\"Name of the library"

Section 2.7 describes how to export own components from SIMIT in order to import them into COMOS.

**Procedure**

1. In the COMOS menu bar, click on the “Plugins” button.
2. In the shortcut menu, select “Automation > SIMIT interface > SIMIT interface configuration” ("Automation > SIMIT interface > SIMIT interface configuration”).

"SIMIT interface configuration" opens in the COMOS work area.

The “SIMIT components” tab is active.
All the SIMIT components that you have imported into COMOS are listed here. Until now, no valve component has been saved.

3. To import the valve component from the SIMIT library "CHEM-BASIC", in the tab menu bar click on "SIMIT components" on "+ Files...".

The dialog window “Open” opens.
2 Configuration of the sample project

2.3 Adding SIMIT components

Figure 2-12

4. Navigate to the component folder of the SIMIT “CHEM-BASIC” library and open the "Valves" folder.

“C:\Program Files (x86)\SIEMENS\Automation\SIMIT\SIMIT SF\components\CHEM-BASIC\Valves”

5. Select the component “Valve.simcmp”.

6. Click on the “Open” button to import the components into COMOS.

Figure 2-13
2 Configuration of the sample project

2.3 Adding SIMIT components

Figure 2.14

Result

You have imported a valve component from the SIMIT library "CHEM-BASIC" into COMOS.
In the next step, link the imported component to the corresponding object in COMOS.

Note

For more information on importing SIMIT components, please refer to the manual "COMOS Automation Automation interfaces" in Section 5.2.1:


For information on further helpful articles, please refer to Section 3 and 4 of this document.
2.4 Component mapping

This section describes how to carry out component mapping in COMOS. Component mapping means that you assign and configure the corresponding COMOS objects to the imported SIMIT components. In this application example, you must assign and configure the relevant valve object in COMOS to the imported valve component.

Procedure

1. In the COMOS menu bar, click on the “Plugins” button.
2. In the shortcut menu, select “Automation > SIMIT interface > SIMIT interface configuration”.

Figure 2-15

3. “SIMIT interface configuration” opens in the COMOS work area. The “SIMIT components” tab is active.
4. Click on tab “Component mapping” to open.

Figure 2-16
5. In the "Active configuration" field, select "COMOS_TO_SIMIT".

Figure 2-17

A prepared configuration opens. In this configuration, some of the component maps and the basic mapping are already present.

Figure 2-18

In the next step, assign the corresponding COMOS object to the imported valve component.

6. To do this, open the R&I flow diagram. The Flow diagram is the basis for the simulation model in SIMIT. Navigate in the Navigator in the "Plant View" to the R&I flow diagram: "P1 Plant (general) > H9 Reaction 02 > P&ID diagram acc. EN 10628, DIN A2".

7. Open the R&I flow diagram by double-clicking on it.
Figure 2-19

8. Select a valve at will (“Valve”) in the R&I flow diagram.

9. Open the selected valve by right-clicking on the corresponding shortcut menu.

10. Click on the entry: “Navigate > Base object” (“Navigate > Base object”)

Figure 2-20
2 Configuration of the sample project

2.4 Component mapping

The corresponding base object of the valve is shown
The object “A10 Globe valve (general)” is selected in the Navigator.

Figure 2-21

11. Change to SIMIT interface configuration (“SIMIT interface configuration”).
12. Drag component "A10 Globe valve (general)” and drop it below the last position in the column "COMOS source object” in the "Component mapping” sector.
The component is created as a COMOS source object.

Figure 2-22
13. In the "Imported SIMIT components" section, select the line for the "Valve" component.
14. Drag the imported SIMIT component "Valve" and drop it in the free assignment field of the previously created valve source object.

Figure 2-23

You have assigned its corresponding SIMIT component to the COMOS object.

Figure 2-24
2 Configuration of the sample project

2.4 Component mapping

15. In the component mapping area, select the line for the valve assignment that has just been made.

   In the "Detail mapping" area, the corresponding configurable properties and parameters are displayed.

16. Place the value for the names of the valves under "Basic property mapping".

   Open the drop-down list box in the "Name" line and "Value" column.

   Select the entry "Name".

Figure 2-25

17. In the "Connector mapping" area, set the value "DI1 DI1" for the SIMIT port "A" and the value "DO1 DO1" for the SIMIT port "B".

18. Click on the "Save" button to save the changes.

19. Click on the "OK" button.

   The "SIMIT interface configuration" closes.
20. Close the R&I flow diagram.

Result

The imported valve component from the SIMIT library "CHEM-Basic" has been assigned to the corresponding COMOS object and configured.
2.5 Exporting SIMIT

This section describes how to carry out the SIMIT export in COMOS.

Procedure

1. Open the “System view” in the COMOS navigator.
2. In the COMOS menu bar, click on the “Plug-ins” button.
3. In the shortcut menu, select “Automation > SIMIT interface > SIMIT export”.

Figure 2-27

The “SIMIT export” dialog opens in the COMOS work area.

Figure 2-28

4. In the COMOS navigator, select the R&I flow diagram “P&ID diagram acc. EN 10628, DIN A2”.
5. Drag&drop the flow diagram to the “Start object” of the “SIMIT export” dialog.
6. Click on the “Browse...” button. The “Save As” dialog is opened.

7. Navigate to the folder in which you wish to save the export file.

8. In the “File Name” box, enter a suitable name for the export file.

9. Click on the “Save” button. The “Save As” dialog is closed.
10. In the “Mapping configuration” box, set the option “COMOS_TO_SIMIT”.

Figure 2-31

11. Click on the “Export” button.

Figure 2-32

The export file is created.

Figure 2-33

Result

You have written the COMOS planning data in an XML format that can be read by SIMIT. You can subsequently import this file into SIMIT and thus automatically generate your simulation file.
2.6 Automatic model generation

This section describes how to import the export file from COMOS into SIMIT in order to automatically generate your simulation model.

Procedure

1. Double-click to open the SIMIT project created in section 2.1 "Creating a SIMIT project".

Figure 2-34

2. The project opens in the portal view "Getting started".
3. Click on "Project view". The project view opens.

Figure 2-35
4. Navigate to the “Charts” folder in the "Project navigation" area.
5. Right-click on the "Charts" folder to open the corresponding shortcut menu and click on the entry: “Automatic modeling > Generic import” ("Automatic modeling > Generic import").

Figure 2-36

The "Generic Import" dialog opens.

6. Click on the "Select file" button. The "Select file" dialog opens.
7. Select the XML file which you had previously exported from COMOS and click on the "Open" button.

Figure 2-37
8. Click on the "Import" button in the "Generic import" dialog to start the automatic modeling of the COMOS data in SIMIT.

Figure 2-38

9. After the import has finished, the dialog "Import completed" opens. Click on the "OK" button in the dialog box.

Figure 2-39

10. Chart “FB.002” has been generated in the "Charts" folder.

Figure 2-40
11. Open the chart by double-clicking and rearrange the individual elements according to your requirements.

In the next step, define the initial conditions for the simulation.
In the application example, for example, set the initial conditions for the reactor inflow and outflow.

12. For this, open the following “Basic components” in the “components” area: “FLOWNET > GENERAL”

13. Drag&Drop basic component “Pnode” to the chart.
You will later use this basic object to define the initial conditions or the output states, too, for the pressure in the simulation.
2 Configuration of the sample project
2.6 Automatic model generation

Figure 2-42

14. Interconnect “Pnode” with the upper inflow to the reactor. To do this, click on the connection point of the “Pnode” and then on the one for through-flow measuring. If you select the “Pnode”, you can define the output controls of the simulation with regard to the pressure for this feed.

Figure 2-43
15. Create a “Pnode” for the remaining inflow and outflows as well.

Result

With the COMOS planning data, you have created your simulation model in SIMIT, automatically, quickly and easily. This allows you to test and simulate the data in SIMIT in parallel to plant planning.

Note

- For further information on generating and executing a simulation with SIMIT, please refer to the application example “Simulation with SIMIT and SIMATIC PCS 7 using a practical example”.  

- For more information on how to automatically create PCS 7 project data using COMOS planning data, please refer to the application example “Integrated Engineering with COMOS and SIMATIC PCS 7 using a practical example”.  

- General information on SIMIT can be found in the SIMIT Media system.  

For information on further helpful articles, please refer to Section 3 and 4 of this document.
2.7 (Optional) Exporting SIMIT simulation components

This section describes how to export your own SIMIT simulation components.

Note

This step is optional and only applies for your own components. The SIMIT basic components that are created with the installation can be imported directly from the SIMIT installation path into COMOS.

C:\ProgramFiles(x86)\SIEMENS\Automation\SIMIT\SIMIT SF\components\"Name of the library"

Procedure

1. Create a new chart. Double-click on the entry “New chart”.
2. Assign a suitable name (e.g. Example Chart) and open the chart created.
3. Select the “Components” task card.
4. Right-click on the library, folder or components under “User components” or “Project components” to open the corresponding context menu.
5. In the context menu, click on “Archive”.

Figure 2.45

The “Save As” dialog opens.
2 Configuration of the sample project

2.7 (Optional) Exporting SIMIT simulation components

6. In the dialog, select the folder in which you wish to save the components and enter the name of the file under “File name”

7. Click on the “Save” button.
   The components are saved.

8. Close SIMIT.

Result

You have exported your own components and can now import them into COMOS.
2.8 Summary

The encompassing integration of SIMIT, COMOS and SIMATIC PCS 7 guarantees a comprehensive data flow over the entire service life of your plant – from planning to commissioning and operation, to modernization. With this you not only optimize your engineering workflows in automation, you also form the basis for the “digital twin” of your real system.
3 Useful information

3.1 Requirements for the use of SIMIT

3.1.1 Hardware requirements

General system requirements

In order to work with SIMIT you will need a PC meeting the following requirements (recommendation from Microsoft).

Table 3-1

<table>
<thead>
<tr>
<th>Processor</th>
<th>Memory configuration</th>
<th>Icon</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 GHz</td>
<td>2 GB *)</td>
<td>DirectX 9 graphics device with at least WDDM 1.0</td>
</tr>
</tbody>
</table>

*) a memory expansion of at least 4 GB is recommended

In addition, you will need a CD drive and a free USB port.

The capacity of the graphics system architecture and the memory expansion can have a clear influence on the performance of SIMIT. If you are processing large SIMIT projects with several hundred charts, you should use a PC of current performance capability.

Required memory

SIMIT occupies approx. 350 MB memory on your hard disk. The precise value depends on the operating system.

Make sure there is enough free space on the drive where the project data is located. If during an operation (e.g. saving a SIMIT chart or starting the simulation) the memory space is insufficient, malfunctions can not be ruled out.

In addition, it is recommended not to place the project data on the drive on which the Windows swap file is located.

Note

For more information on the system requirements, please refer to the SIMIT Readme file.

Readme SIMIT V9.0 SP1

For information on further helpful articles, please refer to Section 3 and 4 of this document.
3 Useful information
3.1 Requirements for the use of SIMIT

3.1.2 Software requirements

Operating systems
SIMIT is a 32-bit application whose functionality is ensured and released for the following operating systems:

- MS Windows 7 SP1 (Professional, Ultimate, Enterprise, 32- and 64-Bit versions)
- MS Windows 10 Pro and Enterprise (32- and 64-Bit versions)
- MS Windows Server 2008 R2 (64 Bit)
- MS Windows Server 2012 R2 (64 Bit)

SIMIT can also be operated under one of these two operating systems as a virtual machine (VM) on a VMware host ESXi V5.5 and V6.0. SIMIT’s ability to run in other environments is not guaranteed, the use is under the user’s own responsibility.

Viewing PDF files
To read the PDF files supplied, you need a PDF Reader compatible with PDF 1.7 (ISO32000-1:2008 PDF).

Security settings
If additional users are to be installed in project directories and in the SIMIT workspace, they must be assigned write rights. These rights must be set up by an administrator.

Note
The rights available in directories in the operating system depend on the operating system used.
In addition, tools for creating partitions determine their own security guidelines.

Hibernation
SIMIT does not allow the PC to change into the state of hibernation.

Date/time

<table>
<thead>
<tr>
<th>NOTICE</th>
<th>Date and time changes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Do not change the date or time of your computer as long as SIMIT is open, as data inconsistencies may occur.</td>
</tr>
</tbody>
</table>
3 Useful information

3.1 Requirements for the use of SIMIT

Compatibility

SIMIT V9.0 cannot be installed if SIMIT V8.x has already been installed. If that is the case, deinstall SIMIT V8.x.

The simultaneous use of SIMIT V5.x or SIMIT V7.x together with SIMIT V9.0 cannot be guaranteed.

Since the virtual Controller is integrated in SIMIT V9.0, before SIMIT V9.0 can be installed it is necessary to deinstall SIMIT VC 3.0 manually if it is present.

SIMIT VC supports PCS 7 versions 7.0 to 8.2 for the replication of the driver modules.

Virus scanner

Virus scanner Trend Micro OfficeScan Client V11.0.4205 has been tested for compatibility with SIMIT V9.0.

Online help

All SIMIT components supplied have online help, which can be opened via the component taskcard as well as from the chart.

Note

For more information on the system requirements, please refer to the SIMIT Readme file.

Readme Service Pack 1 for SIMIT V9.0 SP1 simulation software
Link: https://support.industry.siemens.com/cs/ww/en/view/109743963

For information on further helpful articles, please refer to Section 3 and 4 of this document.
3.2 Requirements for the use of COMOS

Information on the prerequisites for using COMOS 10.2 can be found in the "COMOS Platform Installation" manual.

https://support.industry.siemens.com/cs/ww/en/view/109737534

Note
Additional information on this topic can be found on the COMOS topic page:
www.siemens.com/onlinesupport/comos

For information on further helpful articles, please refer to Section 3 and 4 of this document.
3.3 General information about COMOS and SIMIT

3.3.1 COMOS – Overview

The uniform data platform of the COMOS integrated software solution enables plant planners, operators and installers to achieve a seamless flow of information from project-relevant data across all company levels and project phases. One requirement for effective plant management is optimum networking and coordination of all disciplines and departments involved in the planning and operation of a plant. The COMOS software solutions are the basis for the cooperation of the various disciplines and departments at different locations worldwide throughout the entire life cycle of a plant.

The object orientation of the COMOS software concept ensures consistent application networking. In COMOS, the graphical representation and data representation of a component in a plant is designated as an object. Associated data sheets, lists and other documents are directly linked to the respective objects, forming a unit.

Figure 3-1

The complete plant information is stored in a central database. As a result, COMOS allows all disciplines and departments involved in the engineering and operating phases to always access the same object data. Objects can be processed in COMOS bidirectionally on data sheets as well as in technical drawings. This means that changes to objects or documents are available to every user at all times worldwide, whatever the time zone, and that they are up-to-date.
and consistent. The entire plant, right down to the individual components, can be examined and further developed from a functional and interdisciplinary perspective. The common data management enables COMOS to perform pooling of data in parallel working processes and workflows.

Figure 3-2

The open system architecture of COMOS can be adapted to exactly meet company-specific requirements, allows links to third-party systems and can be integrated into existing EDP (Electronic Data Processing) landscapes. Further information on COMOS is available on the COMOS product page. 

www.siemens.com/comos
3.3.2 SIMIT

The SIMIT simulation software permits real-time simulation and emulation for a comprehensive examination of automation solutions. This new software generation is based for the first time on a uniform simulation platform which can be used both to implement virtual commissioning of the automation technology of systems, machines and processes, and to provide a realistic training environment for plant operators. And this quite simply, at the workplace directly, even without equipment or extensive simulation know-how.

SIMIT offers a modern, clear and user-friendly graphic interface for intuitive operation and fast learning. This makes it possible for automation projects to be implemented faster, more efficiently and safely in the future.

Further information on SIMIT is available on the SIMIT product page.

www.siemens.com/simit
4 Appendix

4.1 Service and Support

Industry Online Support
Do you have any questions or need assistance?
Siemens Industry Online Support offers round the clock access to our entire service and support know-how and portfolio.
The Industry Online Support is the central address for information about our products, solutions and services.
Product information, manuals, downloads, FAQs and application examples – all information is accessible with just a few mouse clicks at: https://support.industry.siemens.com/.

Technical Support
The Technical Support of Siemens Industry provides you fast and competent support regarding all technical queries with numerous tailor-made offers – ranging from basic support to individual support contracts.
Please send queries to Technical Support via Web form: www.siemens.de/industry/supportrequest.

Service offer
Our range of services includes, inter alia, the following:
- Product trainings
- Plant data services
- Spare parts services
- Repair services
- On-site and maintenance services
- Retrofitting and modernization services
- Service programs and contracts
You can find detailed information on our range of services in the service catalog: https://support.industry.siemens.com/cs/sc

Industry Online Support app
You will receive optimum support wherever you are with the “Siemens Industry Online Support” app. The app is available for Apple iOS, Android and Windows Phone:
https://support.industry.siemens.com/cs/ww/en/sc/2067
4.2 Links and Literature

4.2.1 Websites

Table 4-1

<table>
<thead>
<tr>
<th>Topic</th>
<th>Title</th>
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<tr>
<td>\1\ Siemens Industry Online Support</td>
<td><a href="http://support.industry.siemens.com">http://support.industry.siemens.com</a></td>
</tr>
<tr>
<td>\2\ Download page for this entry</td>
<td><a href="https://support.industry.siemens.com/cs/ww/en/view/1094807379">https://support.industry.siemens.com/cs/ww/en/view/1094807379</a></td>
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<td>\3\ SIMIT Product page</td>
<td><a href="http://www.siemens.com/simit">www.siemens.com/simit</a></td>
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<td>\4\ COMOS Product page</td>
<td><a href="http://www.siemens.com/comos">www.siemens.com/comos</a></td>
</tr>
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<td>\5\ COMOS Topic page</td>
<td><a href="http://www.siemens.com/onlinesupport/comos">www.siemens.com/onlinesupport/comos</a></td>
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<td>\5\ PCS 7 Topic page</td>
<td><a href="http://www.siemens.com/onlinesupport/pcs7">www.siemens.com/onlinesupport/pcs7</a></td>
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4.2.2 Application examples

Table 4-2

<table>
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<tr>
<td>\1\ Application Example:</td>
<td><a href="https://support.industry.siemens.com/cs/ww/en/view/77362399">https://support.industry.siemens.com/cs/ww/en/view/77362399</a></td>
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<td>Simulation with SIMIT and SIMATIC PCS 7</td>
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<td>\2\ Application Example:</td>
<td><a href="https://support.industry.siemens.com/cs/ww/en/view/1094807377">https://support.industry.siemens.com/cs/ww/en/view/1094807377</a></td>
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<tr>
<td>Controlled plant engineering from the</td>
<td></td>
</tr>
<tr>
<td>outset with COMOS FEED</td>
<td></td>
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<tr>
<td>\3\ Application Example:</td>
<td><a href="https://support.industry.siemens.com/cs/ww/en/view/109480739">https://support.industry.siemens.com/cs/ww/en/view/109480739</a></td>
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<tr>
<td>Fast and easy generation of Piping and</td>
<td></td>
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<tr>
<td>Instrumentation Diagrams with COMOS P&amp;ID</td>
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<tr>
<td>using a practical example</td>
<td></td>
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<tr>
<td>\4\ Application Example:</td>
<td><a href="https://support.industry.siemens.com/cs/ww/en/view/70922226">https://support.industry.siemens.com/cs/ww/en/view/70922226</a></td>
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<tr>
<td>Integrated Engineering with COMOS and</td>
<td></td>
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<tr>
<td>SIMATIC PCS 7 using a practical example</td>
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Become acquainted with the basic functions and benefits of COMOS FEED and go through a complete standard workflow to generate all the relevant data for the bidding phase and to create the foundations for the basic and detail engineering phase.

Learn about the basic functions and benefits of COMOS P&ID. This application example guides you through a standard workflow to map process engineering, pipe engineering and measurement and control engineering (MSR) procedures.

Learn about the basic functions and benefits of COMOS in conjunction with SIMATIC PCS 7. The application example takes you through a standard workflow. Based on the example, you will be shown how you can exchange data between the two systems.


### Media systems

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<tr>
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<th>Link</th>
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### Forum

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<tbody>
<tr>
<td>1.</td>
<td>German Plant Engineering Software COMOS</td>
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## 4.2.5 Manuals

### Table 4-6

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### 4.3 Documentation of changes

Table 4-7

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<thead>
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<th>Version</th>
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<td>V1.0</td>
<td>03/2017</td>
<td>First version</td>
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