

Pharma Software

# Training Program 2023

**Our comprehensive PAS-X trainings ensure the success of your MES projects in the pharma, biotech, and cell & gene therapy industries**





Said is not **heard**.  
Heard is not **understood**.  
Understood is not **agreed**.  
Agreed is not **applied**.  
Applied is not **maintained**.

Adapted from Konrad Lorenz (1903 – 1989),  
Austrian ethologist, Nobel Prize laureate in 1973



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# Training tracks which meet your specific needs

**+ 3.500**  
people  
trained per year  
(2022)

## Standardized training modules for pharma and biotech manufacturing out of the box

Our Academy is composed of standardized modules that can be selected and organized flexibly to cover all PAS-X MES functionalities. Thus, the Pharma Academy suit your specific manufacturing technologies, such as vaccines, biopharmaceuticals, solids, liquids and other manufacturing operations.

Based on best practice production processes, you learn how to operate PAS-X MES in a virtual factory and how to use PAS-X MES to optimize your processes and design them to be more efficient.



### 1. PAS-X MES Operating track

- **PAS-X MES introduction**
- **Business functions**
- **2 levels: basic, professional**

→ Operators  
→ Supervisors  
→ Key users  
→ QA managers  
→ Project managers  
→ Recipe designers

The PAS-X MES Operating training classes are directed at operators, supervisors and quality management employees. Depending on the selected class, they provide an introduction and in-depth knowledge to PAS-X MES and present the PAS-X MES Business Functions.



### 2. PAS-X MES Administration track

#### **System administration including setup of additional system features**

→ Key users  
→ System administrators  
→ Automation engineers

These training classes are directed at system administrators. They learn how to administer and manage PAS-X MES for productive operation.



### 3. PAS-X MES Adapted track

#### **Individual training classes and customer specific workshops**

→ Operators  
→ Supervisors  
→ Recipe designers  
→ QA managers  
→ Project managers  
→ System administrators

These training classes and workshops are directed at customer specific topics and target PAS-X MES key users as well as personnel from administrative and operative levels.



### 4. Additional Trainings

#### **Additional PAS-X features and modules**

→ Operators  
→ Supervisors  
→ Recipe designers  
→ QA managers  
→ Project managers  
→ System administrators

Training on additional PAS-X features as Track & Trace or PAS-X Savvy designed for key users, administrators and project managers.

# Empower your Team – whenever, wherever!

Whatever your needs, whether you are just starting your MES project or you are ready to advance to the next level, we support you with a suitable training approach. We offer instructor-led, E-learning and Blended Learning for a variety of roles.

- **Are you an Operator, Supervisor, System Administrator or QA Manager?**
- **Would you like to know how you can benefit from PAS-X MES and how PAS-X MES can support you in your day-to-day business?**
- **Are you keen to get practical experience with PAS-X based on specific production processes?**

**“With our training methods you will assimilate the acquired knowledge and make it part of your daily business. We will ensure that you enjoy working with PAS-X!”**



Sarah Zimmer,  
Head of Business Consulting

**Based on your role, we will show you the optimum benefit of using PAS-X:**

- For **Operators**, PAS-X MES will provide safe guidance through the production process.
- For **Supervisors**, PAS-X MES will ensure that you can view the current status of the production lines and their targets at any time.
- For **System Administrators**, PAS-X MES will facilitate the management of user rights, the configuration of printers and the PCS integration.
- For **QA Managers**, PAS-X MES will support you in properly documenting all production steps in compliance with the regulatory requirements.
- For **MBR Designers**, PAS-X MES provides a central cockpit to bring your paper based recipe into an electronic recipe.
- For **Automation Engineers**, PAS-X MES ensures a flexible integration into the automation layer.
- For **Project Managers**, we provide an overview of PAS-X MES to ensure baseline understanding for successful implementation.

## Train with our leading industry experts

- **Smooth implementation of your PAS-X MES project**
- **Successful operation of your PAS-X MES**
- **Profit from our first-hand expertise in pharma processes**
- **Maximize the value of your PAS-X MES**
- **Standardized, modular and scalable training classes**



# Your PAS-X MES training team

Europe

**Well-trained and qualified users thanks  
to our experienced subject matter experts.**



**Sarah Zimmer**  
Head of Business Consulting



**Rana Mousa**  
Manager End User Training



**Brendan Xerri**  
Senior Trainer & Consultant



**Valeriia Kapkova**  
Trainer



**Tomas Lenton**  
Trainer



**Michel Eberhardt**  
Trainer

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Training sessions

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Training Management

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Operating Track

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Administration Track

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Language: English, German

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Training sessions

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Adapted Training Track

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Language: English, German

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Operating Track

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Administration Track

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Language: English

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Operating Track

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Language: English, Russian

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Operating Track

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Administration Track

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Language: English

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Operating Track

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Administration Track

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Language: English, German

# Your PAS-X MES training team



**Well-trained and qualified users thanks  
to our experienced subject matter experts.**



**Svenja Griewaldt**  
Consultant & Trainer



**Philipp Bochert**  
Senior Trainer

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Operating Track

Language: English, German

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Operating Track

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Administration Track

Language: English, German

# Your PAS-X MES training team



**Well-trained and qualified users thanks  
to our experienced subject matter experts.**



**Kristi Korson**  
Head of Training

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Training Management

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Operating Track

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Administration Track

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Adapted Track

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Language: English



**Mike Barny**  
Senior Trainer

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Operating Track

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Language: English



**Keri Murphy**  
Senior Trainer

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Operating Track

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Language: English



**Brendon Gabany**  
Senior Trainer

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Operating Track

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Administration Track

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Language: English



# Your PAS-X MES training team



**Well-trained and qualified users thanks  
to our experienced subject matter experts.**



**Dara Wang**  
Trainer & Project Engineer

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Operating Track,  
Administration Track  
Language: English, Mandarin



**Pairoj Grover (Roj)**  
Trainer & Consultant

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Operating Track  
Administration Track  
Language: English, Thai



**Harshitha Pusapuri**  
Consultant & Trainer

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Operating Track  
Language: English, Hindi



**Chayut Vaikasi (Gap)**  
Trainer & Consultant

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Operating Track  
Language: English, Thai

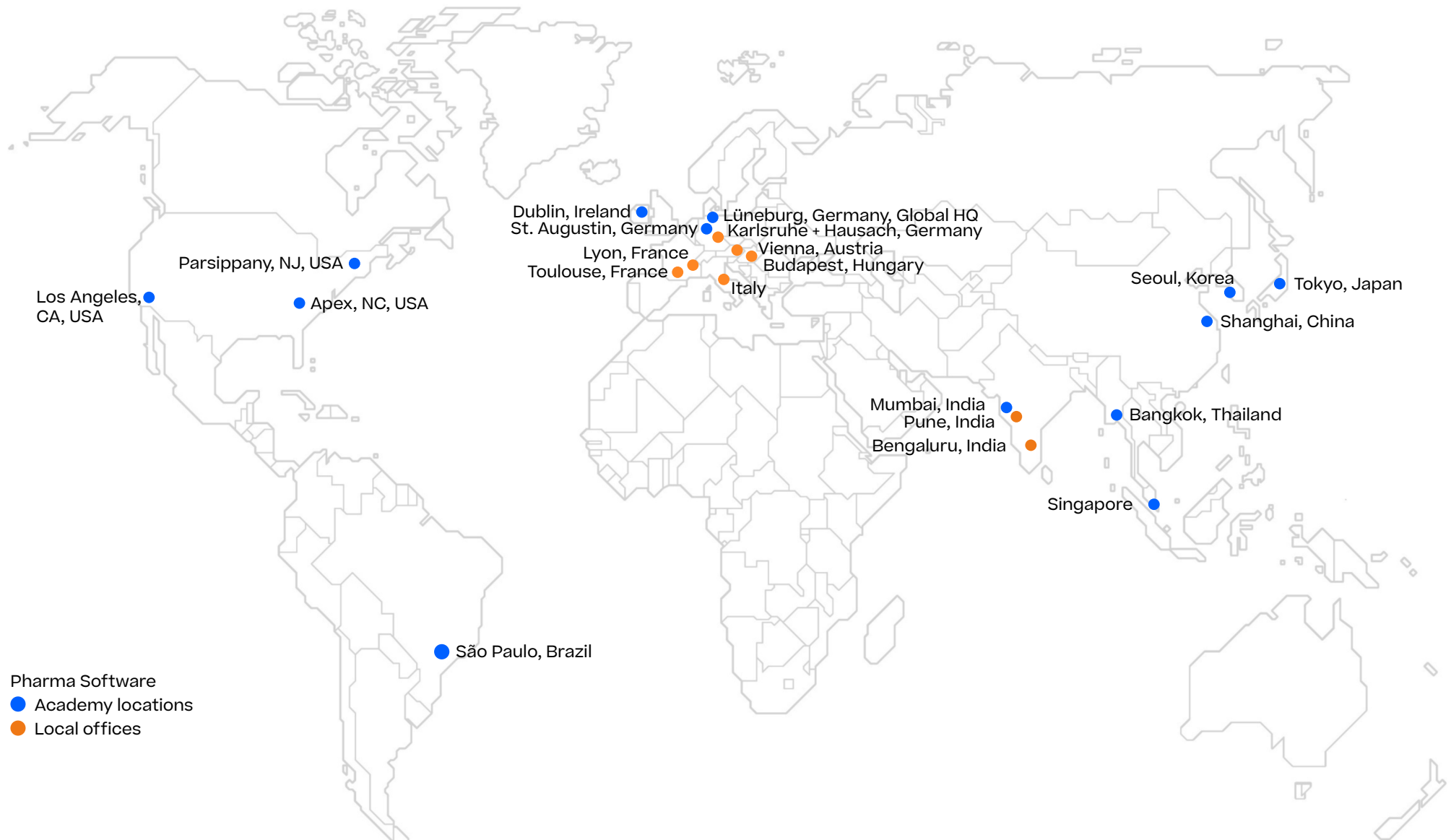


**Amy Wang**  
Senior Consultant & Trainer

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Operating Track  
Administration Track  
Language: English, Mandarin

# Our locations



# Academy Overview

## PAS-X MES training request

[www.koerber-pharma.com/en/services/academy](http://www.koerber-pharma.com/en/services/academy)



## PAS-X MES Operating track

**Basic training** p. 15  
3 day per class

**Professional trainings** p. 17  
1 day per class

- Library Element & GMBR p. 17
- Equipment Management p. 18
- Material Flow p. 19
- Formulas p. 20
- Characteristics & Order Network p. 21
- MBR Design p. 22
- Weighing & Dispensing p. 23
- PAS-X MES for QA (2 days) p. 24
- SCADA (OPC) MBR Design p. 25
- Data Historian MBR Design p. 26
- PAS-X Update Overview p. 27



## PAS-X MES Adapted track

**Customer specific  
trainings** p. 34



## PAS-X MES Administration track

**Administration trainings** p. 28  
2 day per class

- System Administration p. 28
- SCADA (OPC) Administration p. 30
- Data historian Administration p. 31
- Reports & Labels Administration p. 32
- MSI p. 33



## Additional Training

**Track & Trace training** p. 36

**PAS-X Savvy training** p. 38

# Europe – Dates at a glance

## Europe 2023



### Basic

#### Lüneburg, Germany

Feb. 06 – 08 / Feb. 27 – March 01 *	Apr. 18 – 20 / 25 – 27 *
June 05 – 07 / 26 – 28 *	Aug. 28 – 30
Sep. 11 – 13 *	Nov. 06 – 08 / 27 – 29 *

### Professional Material Flow

#### Lüneburg, Germany

Feb. 15	March 08 *	June 14	July 05 *
Sep. 06 / 20 *	Nov. 15	Dec. 06 *	

### Professional SCADA MBR Design

#### Lüneburg, Germany

Feb. 22	July 12 *	Nov. 22	Dec. 13 *
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### System Administration

#### Lüneburg, Germany

Feb. 09 – 10	March 02 – 03 *	June 08 – 09 / 29 – 30 *
Aug. 31 – Sep. 01	Sep. 14 – 15 *	
Nov. 09 – 10 / Nov. 30 – Dec. 01 *		

### Professional Formulas

#### Lüneburg, Germany

Feb. 16	March 09 *	June 15	July 06 *
Sep. 07 / 21 *	Nov. 16	Dec. 07 *	

### Reports & Labels Administration

#### Lüneburg, Germany

March 13 – 14 *	June 19 – 20	Nov. 23 – 24	Dec. 14 – 15 *
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### Professional Library Elements & GMBR

#### Lüneburg, Germany

Feb. 13	March 06 *	June 12	July 03 *
Sep. 04 / 18 *	Nov. 13	Dez. 04 *	

### Professional Characteristics & Order Network

#### Lüneburg, Germany

Feb. 17	March 10 *	June 16	July 07 *
Sep. 08 / 22 *	Nov. 17	Dec. 08 *	

### Professional Equipment Management

#### Lüneburg, Germany

Feb. 14	March 07 *	June 13	July 04 *
Sep. 05 / 19 *	Nov. 14	Dec. 05 *	

### SCADA Administration

#### Lüneburg, Germany

Feb. 20 – 21	July 10 – 11 *	Nov. 20 – 21	Dec. 11 – 12 *
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Training courses refer to PAS-X V3.1.8  
Training courses with (\*) refer to PAS X V3.3



# America – Dates at a glance

## America 2023



### Basic

#### Remote

June 05 – 07      Dec. 04 – 06 \*

#### Apex, NC

Jan. 30 – Feb. 01      Aug. 07 – 09 \*

#### Parsippany, NJ

Apr. 10 – 12 \*      Oct. 9 – 11 \*

### Professional Characteristics & Order Network

#### Remote

June 16      Dec. 15 \*

#### Apex, NC

Feb. 09      Aug. 18 \*

#### Parsippany, NJ

Apr. 21 \*      Oct. 20

### Professional Equipment Management

#### Remote

June 13      Dec. 12 \*

#### Apex, NC

Aug. 15 \*

#### Parsippany, NJ

Apr. 18 \*      Oct. 17

### Professional Formulas

#### Remote

June 15      Dec. 14 \*

#### Apex, NC

Feb. 07      Aug. 17 \*

#### Parsippany, NJ

Apr. 20 \*      Oct. 19

### Professional Library Elements & GMBR

#### Remote

June 12      Dec. 11 \*

#### Apex, NC

Feb. 06      Aug. 14 \*

#### Parsippany, NJ

Apr. 17 \*      Oct. 16

### Professional Material Flow

#### Remote

June 14      Dec. 13 \*

#### Apex, NC

Feb. 10      Aug. 16 \*

#### Parsippany, NJ

Apr. 19 \*      Oct. 18

### Professional MBR Design

#### Apex, NC

Feb. 08

### Professional SCADA MBR Design

#### Parsippany, NJ

Apr. 26 – 27 \*      Oct. 25 – 26

### SCADA Administration

#### Parsippany, NJ

Apr. 25 \*      Oct. 24

### System Administration

#### Remote

June 08 – 09      Dec. 07 – 08 \*

#### Apex, NC

Feb. 02 – 03      Aug. 10 – 11 \*

#### Parsippany, NJ

Apr. 13 – 14 \*      Oct. 12 – 13

Training courses refer to PAS-X V3.1.8  
Training courses with (\*) refer to PAS X V3.3

# Asia – Dates at a glance

## Asia 2023



### Basic

#### Remote

Feb. 06 – 08	Feb. 27 – March 01 *	Apr. 18 – 20 / 25 – 27 *
June 05 – 07 / 26 – 28 *	Aug. 28 – 30	
Sep. 11 – 13 *	Oct. 16 – 18	Nov. 27 – 29 *

### Professional Characteristics & Order Network

#### Remote

Feb. 17	March 10 *	June 16	July 07 *
Sep. 08 / 22 *	Oct. 27	Dec. 08 *	

### Professional Equipment Management

#### Remote

Feb. 14	March 07 *	June 13	July 04 *
Sep. 05 / 19 *	Oct. 24	Dec. 05 *	

### Professional Formulas

#### Remote

Feb. 16	March 09 *	June 15	July 06 *
Sep. 07 / 21 *	Oct. 26	Dec. 07 *	

### Professional Library Elements & GMBR

#### Remote

Feb. 13	March 06 *	June 12 – Sep. 04	
July 03 *	Sep. 18 *	Oct. 23	Dec. 04 *

### Professional Material Flow

#### Remote

Feb. 15	March 08 *	June 14	July 05 *
Sep. 06 / 20 *	Oct. 25	Dec. 06 *	

### Professional SCADA MBR Design

#### Remote

Feb. 22	March 15 *	June 21	July 12 *
Nov. 01	Dec. 13 *		

### SCADA Administration

#### Remote

Feb. 20 – 21 / 09 – 10	March 02 – 03 * / 13 – 14 *
June 08 – 09 / 19 – 20 / 29 – 30 *	
July 10 – 11 *	Aug. 31 – Sep. 01
Sep. 14 – 15 *	Oct. 19 – 20 / 30 – 31
Nov. 30 – Dec. 01 *	Dec. 11 – 12 *

Training courses refer to PAS-X V3.1.8  
Training courses with (\*) refer to PAS X V3.3

# PAS-X MES Operating track



## PAS-X MES Basic training

Basic level



This course is also available as a self-paced E-learning in combination with an instructor-led session held remotely.

PAS-X MES Basic training		TR-BAS
<b>Training objectives</b>	<ul style="list-style-type: none"><li>→ General knowledge of and skills in using PAS-X MES, modeling processes and executing the main system functionalities</li><li>→ Overview of PAS-X MES functionalities covering the whole production process</li></ul>	
<b>Target audience</b>	Users and administrators of the PAS-X system, project manager and key users as supervisors, team leaders, quality personnel, head of production	
<b>Required qualifications</b>	None	
<b>Duration</b>	3 days / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	See pages 17 – 19	
<b>Training method</b>	Interactive presentation, hands-on sessions	
<b>Training content</b>	(see next page)	

# PAS-X MES Operating track



## PAS-X MES Basic training

Basic level



This course is also available as a self-paced E-learning in combination with an instructor-led session held remotely.

### PAS-X Basic training (continued)

TR-BAS

#### Training content

#### PAS-X MES concept

- PAS-X MES product concept

#### User interface

- Overview of the general structure of the user interface
- Dialogs & forms
- Use of filters

#### Master data management

- Equipment management & material master data

#### Master Batch Record – management

- Concept and structure
- Basic recipe
- MBR designer
- Creating recipes
- Bill of material
- Material flow concept & use of equipment

#### Master Batch Record – release workflow

#### Electronic Batch Recording – EBR

- Order Management
- Recipe execution
- Exception handling

#### Batch Record Review

- Exception Review
- Review of critical parameters
- Batch Record release



# PAS-X MES Operating track



## PAS-X MES Library Element & GMBR

Professional level

PAS-X MES Library Element & GMBR		TR-PRO-GMBR
<b>Training objectives</b>	→ Detailed knowledge of and skills in using GMBRs and libraries in the context of MBR modeling and EBR execution processes → Usage of PAS-X MES in real life scenarios	
<b>Target audience</b>	Key users as recipe designers, supervisors and team leaders.	
<b>Required qualifications</b>	<b>mandatory</b> Basic training	<b>optional</b> Formula training
<b>Duration</b>	1 day / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	See pages 17 – 19	
<b>Training method</b>	Presentation, hands-on sessions	
<b>Training content</b>	<div> <b>Generic Master Batch Records</b> <ul style="list-style-type: none"> <li>■ Concept of generic master batch records</li> <li>■ Parameterization of GMBRs</li> <li>■ Managing parameter value lists</li> <li>■ Defining global parameters</li> <li>■ Life cycle management of GMBRs</li> </ul> </div> <div> <b>Library administration</b> <ul style="list-style-type: none"> <li>■ Library concept</li> <li>■ Creating libraries and library elements</li> <li>■ Formula variable in library elements</li> <li>■ Using library elements</li> <li>■ Life cycle management of library elements</li> </ul> </div>	

# PAS-X MES Operating track



## PAS-X MES Equipment Management

Professional level

PAS-X MES Equipment Management training		TR-PRO-EQM
<b>Training objectives</b>	→ Detailed knowledge of and skills in configuring and using equipment as well as reusable equipment → Using PAS-X MES in real-life scenarios	
<b>Target audience</b>	Key users as recipe designers, supervisors and team leaders.	
<b>Required qualifications</b>	<b>mandatory</b> Basic training	<b>optional</b> Formula training
<b>Duration</b>	1 day / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	See pages 17 – 19	
<b>Training method</b>	Presentation, hands-on sessions	
<b>Training content</b>	<div> <b>Equipment management</b> <ul style="list-style-type: none"> <li>■ Equipment concept</li> <li>■ Equipment specific properties</li> <li>■ Equipment cleaning rules</li> <li>■ State diagrams</li> <li>■ Equipment logbook</li> </ul> </div> <div> <b>Equipment usage within Master Batch Record</b> <ul style="list-style-type: none"> <li>■ Using the equipment library</li> <li>■ Creating ESPs</li> <li>■ Defining equipment list</li> <li>■ Automated equipment functions</li> </ul> </div>	

# PAS-X MES Operating track



## PAS-X MES Material Flow

Professional level

PAS-X Material Flow training		TR-PRO-MATFLOW
<b>Training objectives</b>	→ Detailed knowledge of and skills in using the material flow within PAS-X MES → Using PAS-X in real-life scenarios	
<b>Target audience</b>	Key users as recipe designers, supervisors and team leaders.	
<b>Required qualifications</b>	<b>mandatory</b> Basic training	<b>optional</b> Formula training
<b>Duration</b>	1 day / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	See pages 17 – 19	
<b>Training method</b>	Presentation, hands-on sessions	
<b>Training content</b>	<div> <b>Material management</b> <ul style="list-style-type: none"> <li>■ Material master data</li> <li>■ Handling unit management</li> <li>■ Work in process material</li> </ul> </div> <div> <b>Material flow within MBRs</b> <ul style="list-style-type: none"> <li>■ Design material flow</li> <li>■ Material quantification types</li> <li>■ Hand over material</li> <li>■ Holding time</li> <li>■ Automated material flow functions</li> </ul> </div>	

# PAS-X MES Operating track



## PAS-X MES Formulas

Professional level

PAS-X Formulas		TR-PRO-FORM
Training objectives	→ Detailed knowledge of and skills in using the formula editor in PAS-X → Using PAS-X MES in real-life scenarios	
Target audience	Key users as recipe designers, supervisors and team leaders.	
Required qualifications	<b>mandatory</b> Basic training	<b>optional</b> MBR design training
Duration	1 day / 09:00 a.m. – 05:00 p.m.	
Cycle / Schedule	See pages 17 – 19	
Training method	Presentation, hands-on sessions	
Training content	<b>Managing Formulas</b> <ul style="list-style-type: none"><li>■ Overview of formula editor</li><li>■ Formula verification in master batch record</li><li>■ Using formulas for different use cases</li><li>■ Formula simulation in batch execution</li></ul>	



# PAS-X MES Operating track



## PAS-X MES Characteristics & Order Network

Professional level

PAS-X MES Characteristics & Order Network training		TR-PRO-CX
<b>Training objectives</b>	→ Detailed knowledge of and skills in setting up, configuring and using the characteristics functionality within PAS-X for propagating information between different manufacturing orders → Using PAS-X MES in real-life scenarios	
<b>Target audience</b>	Key users as recipe designers, supervisors and team leaders.	
<b>Required qualifications</b>	<b>mandatory</b> Basic training Formula training	<b>optional</b> –
<b>Duration</b>	1 day / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	See pages 17 – 19	
<b>Training method</b>	Presentation, hands-on sessions	
<b>Training content</b>	<div> <b>Characteristics &amp; Order Network</b> <ul style="list-style-type: none"> <li>■ Concept of CX and order network</li> <li>■ Data propagation using CX</li> </ul> <b>Administration of characteristics</b> <ul style="list-style-type: none"> <li>■ Defining characteristics (CX)</li> <li>■ Managing CX for equipment and material</li> <li>■ Maintaining characteristics</li> </ul> </div> <div> <b>Usage of characteristics within recipes</b> <ul style="list-style-type: none"> <li>■ Parameterization of characteristics</li> <li>■ Using of CX basic function</li> <li>■ Using CX within activities</li> </ul> <b>Recipe Execution using characteristics</b> <ul style="list-style-type: none"> <li>■ Writing characteristics to equipment</li> <li>■ Reviewing characteristics</li> </ul> </div>	

# PAS-X MES Operating track



## PAS-X MES MBR Design

Professional level

PAS-X MBR Design training		TR-PRO-MBR
<b>Training objectives</b>	→ Specific knowledge on material flow design aspects as well as on event driven workflows → Detailed knowledge of and skills in using signal sender and signal receiver → Using PAS-X MES in real-life scenarios	
<b>Target audience</b>	Key users as recipe designers, supervisors, team leaders and quality personnel.	
<b>Required qualifications</b>	<b>mandatory</b> Basic training	<b>optional</b> Formula training
<b>Duration</b>	1 day / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	See pages 17 – 19	
<b>Training method</b>	Presentation, hands-on sessions	
<b>Training content</b>	<div> <b>Master Batch Record</b> <ul style="list-style-type: none"> <li>■ Simulation tools</li> <li>■ Recipe dependencies ERP / MES</li> <li>■ Material flow design aspects based on factory layout</li> <li>■ Workflow design for parallel, sequential or repeatable processes</li> <li>■ Usage of the layer concept for structuring workflows</li> <li>■ Specific design patterns</li> </ul> </div> <div> <b>Managing Signals</b> <ul style="list-style-type: none"> <li>■ Concept of signals</li> <li>■ Signal buffering</li> <li>■ Signal usage within workflow design</li> </ul> </div>	

# PAS-X MES Operating track



## PAS-X MES Weighing & Dispensing

Professional level

PAS-X MES Weighing & Dispensing training		TR-PRO-WD
<b>Training objectives</b>	→ Detailed knowledge of and skills in weighing and dispensing of materials in the context of the MBR modeling and EBR execution process → Usage of PAS-X MES in real life scenarios	
<b>Target audience</b>	Key users as recipe designers, supervisors and team leaders.	
<b>Required qualifications</b>	<b>mandatory</b> Basic training	<b>optional</b> –
<b>Duration</b>	1 day / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	On request	
<b>Training method</b>	Presentation, hands-on sessions	
<b>Training content</b>	<div><b>Weighing recipe &amp; administration</b><ul style="list-style-type: none"><li>■ Bill of material</li><li>■ Container Management</li><li>■ Weighing configuration</li></ul><b>Weighing preparation</b><ul style="list-style-type: none"><li>■ Prepare production</li><li>■ Shop floor order dialog</li><li>■ Material item setting</li></ul></div> <div><b>Weighing recipe execution</b><ul style="list-style-type: none"><li>■ Different weighing modes</li><li>■ Manual take-out</li><li>■ Weighing procedures</li><li>■ Material takeouts</li><li>■ Yield weighing</li></ul><b>Post-weighing activities</b><ul style="list-style-type: none"><li>■ Inventory adjustment</li><li>■ Takeout log information</li><li>■ Managing material returns &amp; losses</li></ul></div>	

# PAS-X MES Operating track



## PAS-X MES for QA

Professional level

PAS-X for QA training		TR-PRO-QA
Training objectives	→ Detailed knowledge of and skills in using PAS-X for QA purposes → Using PAS-X in real-life scenarios	
Target audience	Key users as quality managers, supervisors and head of production.	
Required qualifications	<b>mandatory</b> –	<b>optional</b> –
Duration	2 days / 09:00 a.m. – 05:00 p.m.	
Cycle / Schedule	See pages 17 – 19	
Training method	Presentation, hands-on sessions	
Training content	<b>Quality Assurance with PAS-X</b> <ul style="list-style-type: none"><li>■ Life cycle management of master batch records</li><li>■ Critical parameters</li><li>■ Exception handling</li><li>■ Review by Exception</li><li>■ Batch record review &amp; approval</li><li>■ Archiving of batch record reports</li><li>■ Batch quality attributes</li></ul>	



# PAS-X MES Operating track



## PAS-X MES SCADA (OPC) MBR Design

Professional level

### PAS-X SCADA (OPC) MBR Design training

TR-PRO-SCADA

<b>Training objectives</b>	→ Detailed knowledge of and skills in using PCS MBR elements → Using PAS-X in real-life scenarios	
<b>Target audience</b>	Key users as recipe designers and automation engineers.	
<b>Required qualifications</b>	<b>mandatory</b> Basic training	<b>optional</b> Formula training
<b>Duration</b>	1 day / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	See pages 17 – 19	
<b>Training method</b>	Presentation, hands-on sessions	
<b>Training content</b>	<b>SCADA (OPC) MBR Design</b> <ul style="list-style-type: none"><li>■ Introduction to SCADA (OPC) Integration</li><li>■ Managing PCS MBR elements</li><li>■ Recipe design using PCS MBR elements</li><li>■ Using alias resolution within the recipe</li><li>■ Signal handling to drive recipe execution</li><li>■ Recipe execution with PCS MBR elements</li><li>■ Alarm &amp; Event handling</li></ul>	

# PAS-X MES Operating track



## PAS-X Data Historian MBR Design

Professional level

### PAS-X Data historian MBR Design training

TR-PRO-DH

<b>Training objectives</b>	→ Detailed knowledge of and skills in using PCS MBR elements → Using PAS-X MES in real-life scenarios	
<b>Target audience</b>	Key users as recipe designers and automation engineers.	
<b>Required qualifications</b>	<b>mandatory</b> Basic training	<b>optional</b> Formula training
<b>Duration</b>	1 day / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	See pages 17 – 19	
<b>Training method</b>	Presentation, hands-on sessions	
<b>Training content</b>	<b>Introduction</b> <ul style="list-style-type: none"><li>■ Architecture</li><li>■ Why do we need a Data historian?</li></ul> <b>Prerequisites</b> <ul style="list-style-type: none"><li>■ Process knowledge</li><li>■ Limitations</li><li>■ Time</li></ul> <b>Common use cases</b> <b>Implementation in PAS-X MES</b>	

# PAS-X MES Operating track



## PAS-X MES Update Overview trainings

Professional level

### PAS-X Update Overview

<b>Training objectives</b>	→ Knowledge of new functionalities implemented in a new PAS-X MES version → Understanding of the motivation, idea and concept of these functionalities	
<b>Target audience</b>	Key users as recipe designers, supervisors and team leaders	
<b>Required qualifications</b>	<b>mandatory</b> Knowledge of the system that is upgrade from	<b>optional</b> –
<b>Duration</b>	1 day / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	On request	
<b>Training method</b>	Presentation, system demonstration	
<b>Training content</b>	Depending on the versions the content differs. The delta between two PAS-X MES Versions is explained, this can include: <ul style="list-style-type: none"><li>■ New functionalities and how those can be used within the system</li><li>■ New dialogs and their purpose</li><li>■ Already existing functionalities with a changed behavior</li><li>■ Functionalities and/or dialogs which are not available any longer due to e.g. replacement</li><li>■ Software architecture</li></ul>	

# PAS-X MES Administration track



## PAS-X MES System Administration

PAS-X System Administration training		TR-ADMIN-SYS
<b>Training objectives</b>	<ul style="list-style-type: none"><li>→ Setting up, configuring and maintaining the PAS-X MES client system – the administrative perspective</li><li>→ Detailed knowledge of and skills in system administration of a PAS-X MES client environment</li><li>→ Using PAS-X MES in real-life scenarios</li></ul>	
<b>Target audience</b>	Administrators of the PAS-X system.	
<b>Required qualifications</b>	<b>mandatory</b> –	<b>optional</b> Basic training
<b>Duration</b>	2 days / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	See pages 17 – 19	
<b>Training method</b>	Presentation, hands-on sessions	
<b>Training content</b>	(see next page)	

# PAS-X MES Administration track



## PAS-X MES System Administration

### PAS-X MES System Administration training (continued)

TR-ADMIN-SYS

#### Training content

#### System overview

- System architecture

#### User administration

- Management of users/user groups
- Rights management

#### PAS-X MES GUI configuration

#### Audit trail

#### PAS-X MES printing/reporting

- Printing architecture
- Printing configuration

#### System monitoring

#### PAS-X MES communication

- ERP-interface – principles
- Monitoring of the ERP interface

#### PAS-X MES client configuration

- Scale configuration
- Client configuration

# PAS-X MES Administration track



## PAS-X MES SCADA (OPC) Administration

PAS-X MES SCADA (OPC) Administration training		TR-ADMIN-SCADA
<b>Training objectives</b>	→ Setting up, configuring and maintaining the PAS-X MES client system – the administrative perspective → Detailed knowledge of and skills in setting up and connecting PAS-X MES to external systems for automatic data exchange (Scada, DCS)	
<b>Target audience</b>	Key users as automation engineers, system administrators as well as recipe designers.	
<b>Required qualifications</b>	<b>mandatory</b> –	<b>optional</b> Basic training
<b>Duration</b>	2 days / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	See pages 17 – 19	
<b>Training method</b>	Presentation, hands-on sessions	
<b>Training content</b>	<div> <b>Introduction to SCADA (OPC) Integration</b> <ul style="list-style-type: none"> <li>■ Concepts of process control integration (PCS)</li> <li>■ PCS system setup</li> <li>■ Communication monitoring within PAS-X MES</li> </ul> </div> <div> <b>PCS MBR elements</b> <ul style="list-style-type: none"> <li>■ Setup of PCS MBR elements</li> <li>■ PCS recipe information within PAS-X MES</li> <li>■ Concept and usage of aliasing</li> <li>■ Configuration of state machines</li> <li>■ Synchronization of level 2 systems and PAS-X MES</li> <li>■ Using state mapping to drive state transitions</li> <li>■ Authoring of PCS MBR elements</li> <li>■ Recipe execution with PCS MBR elements</li> </ul> </div>	



# PAS-X MES Administration track



## PAS-X MES Data Historian Administration

### PAS-X Data Historian Administration training

TR-ADMIN-DH

<b>Training objectives</b>	→ Setting up, configuring and maintaining the PAS-X MES client system – the administrative perspective → Detailed knowledge of and skills in setting up and connecting PAS-X MES to external systems for automatic data exchange (Scada, DCS)	
<b>Target audience</b>	Key users as automation engineers, system administrators as well as recipe designers.	
<b>Required qualifications</b>	<b>mandatory</b> –	<b>optional</b> Basic training
<b>Duration</b>	2 days / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	See pages 17 – 19	
<b>Training method</b>	Presentation, hands-on sessions	
<b>Training content</b>	<b>Introduction</b> <ul style="list-style-type: none"> <li>■ Concepts of process control integration (PCS)</li> <li>■ How the data historian fits in</li> </ul> <b>Prerequisites</b> <ul style="list-style-type: none"> <li>■ Process engineer</li> <li>■ Automation engineer</li> </ul> <b>Interface Setup</b> <ul style="list-style-type: none"> <li>■ Used components</li> <li>■ Configurations</li> </ul>	<b>How to do it in PAS-X MES</b> <ul style="list-style-type: none"> <li>■ Tags, phases, parameters</li> <li>■ Alias management</li> <li>■ Synchronization</li> <li>■ Status controls</li> <li>■ Creating PCS MBR elements</li> <li>■ Affecting the process engineers</li> </ul>

# PAS-X MES Administration track



## PAS-X MES Reports & Labels Administration

PAS-X MES Reports & Labels Administration training		TR-ADMIN-REP
<b>Training objectives</b>	<ul style="list-style-type: none"><li>→ Setting up, configuring and maintaining the PAS-X MES client system – the administrative perspective</li><li>→ Detailed knowledge of and skills in setting up and configuring the report management in PAS-X MES, including Crystal Reports and related SQL queries</li><li>→ Using PAS-X in real-life scenarios</li></ul>	
<b>Target audience</b>	Administrators of the PAS-X MES system.	
<b>Required qualifications</b>	<b>mandatory</b> –	<b>optional</b> Basic training
<b>Duration</b>	2 days /09:00 a.m. – 05:00 p.m.	
<b>Cycle /Schedule</b>	On request	
<b>Training method</b>	Presentation, hands-on sessions	
<b>Training content</b>	<div><b>Introduction</b><ul style="list-style-type: none"><li>■ Basics of reporting</li><li>■ Using SQL</li><li>■ Basics of crystal report</li></ul><b>Label design</b><ul style="list-style-type: none"><li>■ Data model for labels</li><li>■ Label design with crystal report</li><li>■ Printing configuration</li></ul></div> <div><b>Batch Record Report</b><ul style="list-style-type: none"><li>■ Data model for batch report</li><li>■ Batch Record Report design</li><li>■ Printing configuration</li></ul></div>	

# PAS-X MES Administration Track



## PAS-X MES MSI Feature Package

Feature package trainings

PAS-X MSI Feature Package training		TR-FP-MSI
<b>Training objectives</b>	<ul style="list-style-type: none"> <li>→ Setting up, configuring and maintaining the PAS-X MES client system as well as messages – the administrative perspective</li> <li>→ Detailed knowledge of and skills in setting up and connecting PAS-X MES to external systems for automatic data exchange (SCADA, DCS, Smart EQM)</li> <li>→ Using PAS-X MES in context of MSI in real-life scenarios</li> </ul>	
<b>Target audience</b>	Key users as automation engineers, system administrators as well as recipe designers	
<b>Required qualifications</b>	<b>mandatory</b> Basic training	<b>optional</b> PAS-X MES formulas training PAS-X MES SCADA (OPC) MBR design training PAS-X MES SCADA (OPC) administration Training
<b>Duration</b>	1 day / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	On request	
<b>Training method</b>	Presentation, hands-on sessions	
<b>Training content</b>	<div> <b>Introduction of MSI:</b> <ul style="list-style-type: none"> <li>■ Concept of Level 2 integration</li> <li>■ Concept of message-based shopfloor integration</li> <li>■ MSI adapter configuration</li> <li>■ Communication monitoring as well as troubleshooting</li> </ul> </div> <div> <b>Message administration and MBR design:</b> <ul style="list-style-type: none"> <li>■ Creation and administration of message</li> <li>■ Recipe design and execution of Interface BF</li> <li>■ Discussion and design of use cases</li> </ul> </div>	

# Customized key and end user training

## **Do you wish for a smooth MES implementation process and an effective training of all relevant employees?**

We help you minimize production downtime by familiarizing your team with the system and preparing them accordingly for their tasks. This is how you ensure a successful start with PAS-X.

In our training courses, we link the basic understanding of the system and the functions to be found in it to the tasks to be performed, which reflect the customer-specific processes and production steps. Therefore, we offer training courses that are individually tailored to your needs, which we also design to fit your production processes.

## **Would you like to train your employees yourself?**

We also support you in conducting training for your end users with our train the trainer approach. In these, the key users are enabled to conduct the training themselves for all relevant team members. Of course, we can also take care of the end-user training for you.

**However you choose, a workshop to assess your needs and determine the scope of training is the starting point for customized training, followed by close collaboration between your team and our trainers. Together, we develop the appropriate training program and materials.**

# PAS-X MES Adapted track



## Customer specific

Customer specific trainings		TR-WS
Training objectives	→ Objectives, duration and content to be clarified with the customer	
Target audience	To be defined	
Required qualifications	To be defined	
Duration	4 days / 09:00 a.m. – 05:00 p.m.	
Cycle / Schedule	On request	
Training method	Presentation, hands-on sessions	
Training content	<ul style="list-style-type: none"><li>■ Basis: Standard training data suitable for agreed topic</li><li>■ Focus: Developing customer-specific MBR's in workshops</li><li>■ Workshops are usually held at customer's premises</li></ul>	

# Additional training



## Additional training Track & Trace Basic training

Track & Trace Basic training		TR-FP-TT
<b>Training objectives</b>	→ Detailed knowledge of and skills in setting up, configuring and using the Track & Trace software → Using Track & Trace in real-life scenarios	
<b>Target audience</b>	Key users as team leaders and production leads.	
<b>Required qualifications</b>	<b>mandatory</b> –	<b>optional</b> –
<b>Duration</b>	1 day / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	See pages 17 – 19	
<b>Training method</b>	Presentation, hands-on sessions Customer specific workshop or training can be agreed upon in advance	
<b>Training content</b>	<ul style="list-style-type: none"> <li>■ Concept of serialization</li> <li>■ PAS-X Track &amp; Trace – features and architecture</li> <li>■ User interface</li> <li>■ Dialog overview</li> <li>■ Process order workflow</li> </ul>	

# Additional training



## Additional training Track & Trace Administration

Track & Trace Administration training		TR-ADMIN-TT
<b>Training objectives</b>	→ Setting up, configuring and maintaining the PAS-X MES client system – the administrative perspective → Detailed knowledge of and skills in setting up and connecting PAS-X MES Track & Trace and line controller as well as configuring and monitoring the connection → Using PAS-X MES X in real-life scenarios	
<b>Target audience</b>	Administrators of the PAS-X system.	
<b>Required qualifications</b>	<b>mandatory</b> –	<b>optional</b> Basic training
<b>Duration</b>	1 day / 09:00 a.m. – 05:00 p.m.	
<b>Cycle / Schedule</b>	On request	
<b>Training method</b>	Presentation, hands-on sessions Customer specific workshop or training can be agreed upon in advance	
<b>Training content</b>	<ul style="list-style-type: none"> <li>■ Configuration</li> <li>■ User/Rights management</li> <li>■ Audit trail</li> <li>■ Control data</li> <li>■ Background processes</li> <li>■ Monitoring</li> <li>■ Interfaces</li> </ul>	



# Additional training



## Additional training PAS-X Savvy General training



This course is also available as a self-paced E-learning in combination with an instructor-led session held remotely.

### PAS-X Savvy General training

<b>Training objectives</b>	→ Navigation within PAS-X Savvy → General understanding of the functionality and usability of PAS-X Savvy → Data Visualization and Data Analysis approaches of my data → Result Reporting and Collaboration in PAS-X Savvy	
<b>Target audience</b>	All users which are going to work with PAS-X Savvy, any roles.	
<b>Required qualifications</b>	<b>mandatory</b> –	<b>optional</b> –
<b>Duration</b>	4 hours	
<b>Cycle / Schedule</b>	On request / 2 session for 2 hours recommended	
<b>Training method</b>	Remote training with presentation and system demonstration	
<b>Training content</b>	<ul style="list-style-type: none"> <li>■ Savvy Introduction</li> <li>■ Savvy Glossary</li> <li>■ Navigation within PAS-X Savvy</li> <li>■ Filtering and finding the required data</li> <li>■ Data Visualization</li> <li>■ Data Analysis</li> <li>■ Result Reporting</li> </ul>	

# Additional training



## Additional training PAS-X Savvy Admin training



This course is also available as a self-paced E-learning in combination with an instructor-led session held remotely.

### PAS-X Savvy Admin training

#### Training objectives

- Detailed knowledge of PAS-X Savvy administration
- Tracking data import and troubleshooting
- User and access management

#### Target audience

Core users, team leaders and process experts.

#### Required qualifications

##### mandatory

PAS-X Savvy General training

##### optional

–

#### Duration

3 hours

#### Cycle / Schedule

On request

#### Training method

Remote training with hand on system navigation

#### Training content

- Access and Navigation in PAS-X Savvy Administration
- Tracking data import and how to troubleshoot
- Global System Settings
- User Groups and User Management

# Additional training



## PAS-X Savvy Programming training



This course is also available as a self-paced E-learning in combination with an instructor-led session held remotely.

### PAS-X Savvy Programming training

**Training objectives**

- Python programming in PAS-X Savvy
- Develop your own Algorithm
- Develop your own GUI

**Target audience**

Data Scientist, Data Analysts

**Required qualifications****mandatory**

Python 3 (Numpy, Pandas, Ploty, statsmodel, Scipy)

**optional**

SQL, REST API

**Duration**

4 – 8 hours

**Cycle / Schedule**

On request

**Training method**

Remote

**Training content**

Depending on request

- Introduction and using of Python API in PAS-X Savvy
- Develop your own algorithm
- Building a GUI to make developed algorithms accessible to other users
- Sustainable algorithm development in PAS-X Savvy
- Introduction of Savvy Python functions

# Contact

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