ADDITIVE**MINDS**
ACADEMY

System operation, Software training and Education Packages

February 2023

A brand of EOS GmbH

Introduction AM Academy

Additive Minds Academy is the EOS education provider for the Additive Manufacturing (AM) industry.

Additive Minds Academy is the EOS education provider for the Additive Manufacturing (AM) industry.

Our passion is to enable people and organizations worldwide to use the potential of industrial 3D printing for responsible manufacturing. We are building partnerships and programs that provide enablement, and inspiration to future generations of AM creators and innovators.

In cooperation with renowned partners, Additive Minds Academy has developed a comprehensive online training program to optimize onboarding processes and accelerate your knowledge buildup at the forefront of additive manufacturing innovation. The portfolio consists of online courses for all levels of expertise.

Our comprehensive digital learning paths bring you up to speed in the shortest possible time and are completed with an examination and a certificate.

Our digital courses make AM knowledge available anytime, anywhere. Thus, they help reduce training time and costs, and by conserving resources contribute to eco-friendly learning.

We design our products with state-of-the art learning methods to be engaging and fun to use. Finally, we are committed to smart learning and promote innovative tools to provide you the best learning experience, while setting the course for future learning with augmented and virtual reality formats.
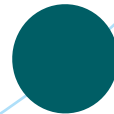
Types of teaching

Class Room Training:

The Classroom Training is tied to time and space, one or more trainers bring the participants closer to the learning content and carry out exercises with them.

Remote Training:

Specific, small groups, remote training is basically training without physical presence using various methods like webinars, video calls, MS Teams or Zoom session, pre-prepared tailored podcasts, face-to-face live online training.

Blended: Training

Blended learning describes a form of learning that strives for a didactically meaningful combination of traditional face-to-face seminars and modern forms of E-Learning. The concept combines the effectiveness and flexibility of electronic forms of learning with the social aspects of face-to-face communication.

Courses
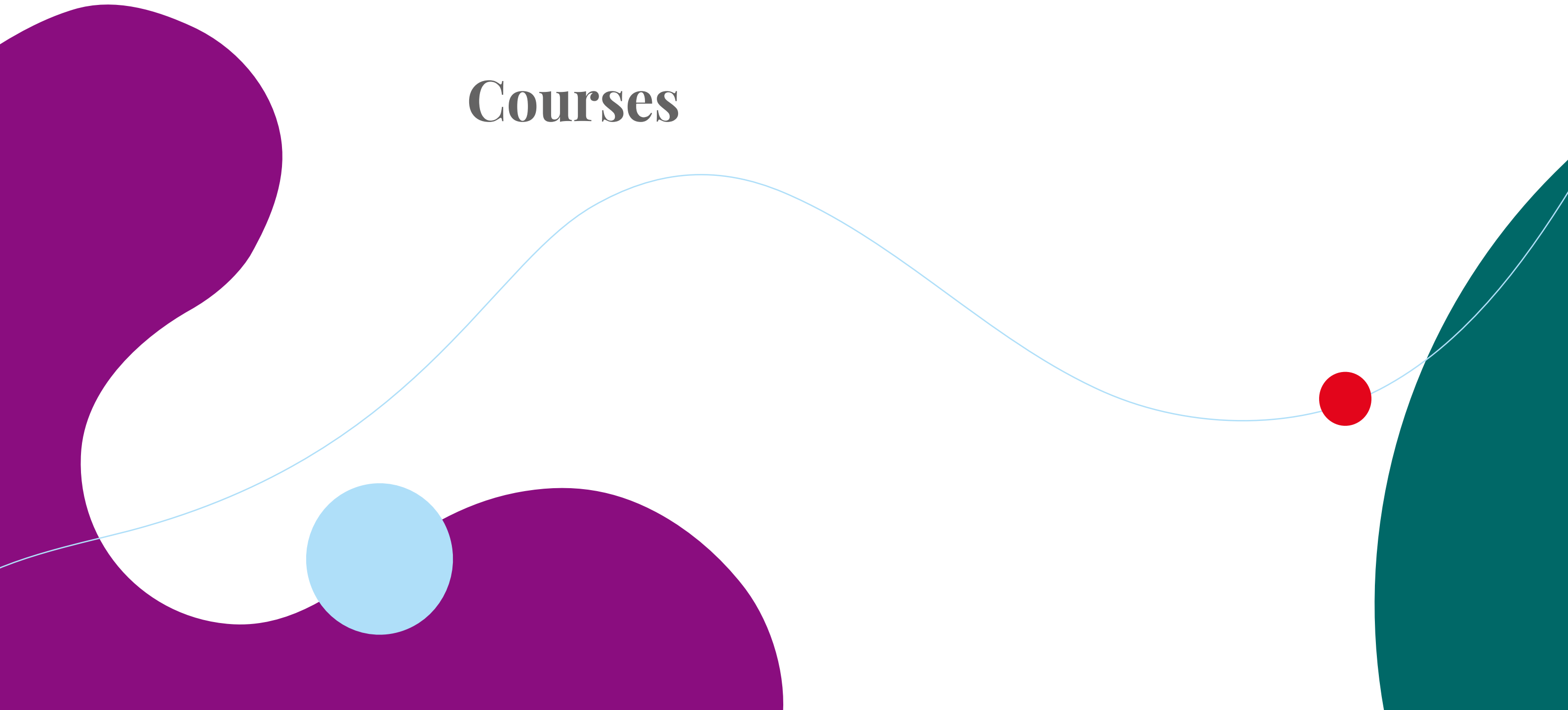
System Operation

Training System Operation Polymer

Venue	At your site
Duration	2.5 days (excl. travelling days)
Participants	max. 4 participants
Languages	English, German, other languages to be agreed
Prerequisites	Basic know how of handling Windows PCs
Target Group / Job Role	System Operators Other Users

System and Duration	At your site
FORMIGA P 110	0105-0001
EOS P 396	0105-0002
EOS P 500 (3 days)*	0105-0103
EOS P 760 (4.5 days)*	0105-0003
EOS P 770	0105-0078
EOS P 810	0105-0111

* Training duration excl. travelling days
** incl. Data Preparation Training

General

Intense training on the safe and efficient operation of EOS systems.

Objectives

- Learn the safe handling of EOS Laser-Sintering Systems
- Work safety and handling procedures of the machine itself and its peripherals

Content

Part 1 :   Work safety instructions
           Rules and procedures for safe working
           Safety equipment of machine and peripherals

Part 2 :   Laser Sintering Process
           Workflow and main system components
           Overview of EOS Materials

Part 3:   Operation of machine and peripherals
           Handling of EOS processing software
           Set-up, job-start and observation of process
           Post processing procedures

Part 4 :   Daily System Care
           Cleaning and Maintenance

Part 5 :   Handling of EOS laser-sintering materials

Part 6 :   Check and adjustment of machine settings
           Building and Evaluation of EOS Reference job
           Evaluation of parts built

Sale price (€)

P 110, P 396, P 770

4.500,–

P 500

5.400,–

P 760**, P 810**

8.100,–

Training System Operation Metal

Venue	At your site
Duration	2.5 days (excl. travelling days)
Participants	max. 4 participants
Languages	English, German, other languages to be agreed
Prerequisites	Basic know how of handling Windows PCs
Target Group / Job Role	System Operators Other Users

System and Duration	At your site
EOS M 100 (2 days)*	0105-0050
EOSINT M 270 (4,5 days)*	0105-0045
EOSINT M 280 (4,5 days)*	0105-0029
EOS M 290	0105-0039
EOS M 300-4 (3 days)*	0105-0117
EOS M 400 (3 days)*	0103-0021
EOS M 400-4 (3 days)*	0105-0074
AMCM M 290-1 1kW	500021774
AMCM M 290-2 400W	500018122
AMCM M 290-2 1kW	500018122

* Training duration excl. travelling days
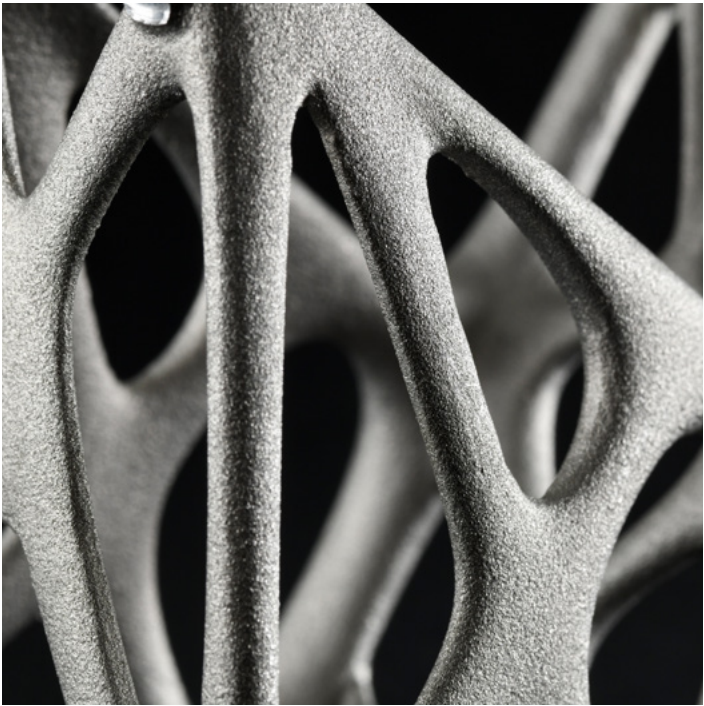** incl. Data Preparation Training

General

Intense training on the safe and efficient operation of EOS systems.

Objectives

- Learn the safe handling of EOS Laser-Sintering Systems
- Work safety and handling procedures of the machine itself and its peripherals

Content

Part 1 : **Work safety instructions**
Rules and procedures for safe working
Safety equipment of machine and peripherals

Part 2 : **Laser Sintering Process**
Workflow and main system components
Overview of EOS Materials

Part 3: **Operation of machine and peripherals**
Handling of EOS processing software
Set-up, job-start and observation of process
Post processing procedures

Part 4 : **Daily System Care**
Cleaning and Maintenance

Part 5 : **Handling of EOS laser-sintering materials**

Part 6 : **Check and adjustment of machine settings**
Building and Evaluation of EOS Reference job
Evaluation of parts built

Sale price (€)
M 100

3.600,–

M 290, M 290-1 (1 kW), M 290-2 (400 W), M 290-2 (1 kW)

4.500,–

M 300-4, M 400, M 400-4

5.400,–

M 270, M 280**

8.100,–

Training System Operation – Open courses Maisach

Venue	Technical Training Center Maisach
Duration	2.5 days
Participants	max. 4 participants per group
Languages	English, German
Prerequisites	Basic know how of handling Windows PCs
Target Group / Job Role	System Operators Other Users

Article	Article N°
EOS M 290	500026548
EOS P 396	500026922

Benefits for you

- Your machine is not blocked for training purposes; you can continue your production
- You use our powder and our wearing parts
- Your employee is focused on training only
- Exchange with participants from other companies
- Small groups up to four participants which means intense learning
- Lunch and refreshment drinks included

General

Intense training on the safe and efficient operation of EOS systems.

Objectives

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Part 1 :	Work safety instructions
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	Set-up, job-start and observation of process
	Post processing procedures
Part 4 :	Daily System Care
	Cleaning and Maintenance
Part 5 :	Handling of EOS laser-sintering materials
Part 6 :	Check and adjustment of machine settings
	Building and Evaluation of EOS Reference job
	Evaluation of parts built

Visit online

Sale price (€)

M 290 / P 396

1.950,–

Software Training

Remote Training Parameter Editor for EOSPRINT 2.X

Venue	Remotely via MS Teams
Duration	1,5 days
Participants	max. 4 participants
Languages	English, German, other languages to be agreed
Prerequisites	• System Operation and Data preparation training accomplished • Deep process understanding needed • System has been installed 4-6 weeks before
Target Group	Data Preparation Experts AM Designers

| Article	Article N° (1 seat)	Article N° (4 seats)
Parameter Editor Metal	500021067	500021066
Parameter Editor Polymer	500021069	500021068

General

Enabling the use of Parameter Editor for EOS systems and understanding the cause and effects of parameter modifications

Objectives

• Introduction of basic principles of parameter-set creation using EOS Parameter Editor functionalities

• Learn how to save and organize parameter sets with self-created values

Content:

Part 1 :   **Introduction to parameters**
Theory of Parameter Editing
Cause and effect explanation of individual parameter settings

Part 2 :   **Parameter Editor Functionality in EOS processing software**
Overview of Parameter Editor features
Software user interface for parameter set creation
Creation of parameters to show software proficiency and understanding

Part 3:   **Illustration of parameter impact**
Running a training job with varied parameters to explore influences
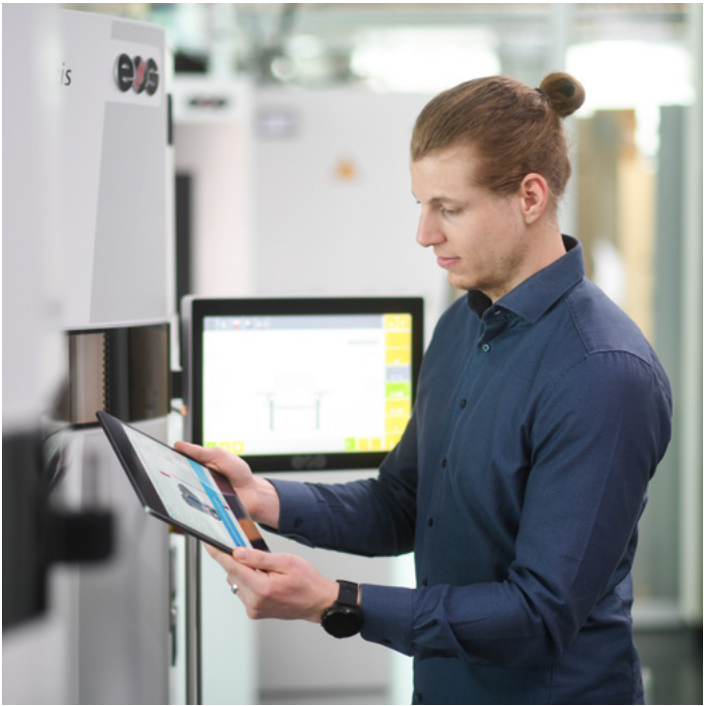
Sale price (€)

1 seat

2.880,–

4 seats

3.840,–

Onsite – Training Parameter Editor for EOSPRINT 2.X

Venue	At your site or at EOS headquarter Germany
Duration	Polymer: 1.5 days (excl. travelling days) Metal: 2 days (excl. travelling days)
Participants	max. 4 participants
Languages	English, German, other languages to be agreed
Prerequisites	• System Operation and Data preparation training accomplished • Deep process understanding needed • System has been installed 4-6 weeks before
Target Group	Data Preparation Experts AM Designers

Article	Article N°
Parameter Editor Metal	0106-0103
Parameter Editor Polymer	0106-0104

General

Enabling the use of Parameter Editor for EOS systems and understanding the cause and effects of parameter modifications

Objectives

- Introduction of basic principles of parameter-set creation using EOS Parameter Editor functionalities
- Learn how to save and organize parameter sets with self-created values
- Experience a hands-on workshop with one build job over night

Content

Part 1 : Introduction to parameters

Theory of Parameter Editing
Cause and effect explanation of individual parameter settings

Part 2 : Parameter Editor Functionality in EOS processing software
Overview of Parameter Editor features
Software user interface for parameter set creation
Creation of parameters to show software proficiency and understanding

Part 3: Illustration of parameter impact
Running a training job with varied parameters to explore influences

Sale price (€)

Polymer

5.760.–

Metal

7.680.–

* Training duration excl. travelling days

Training EOSPRINT/ EOSCONNECT APIs for Integrators

Venue	At your site or at EOS headquarter Germany
Duration	1.5 days (excl. travelling days)
Participants	max. 5 participants
Languages	English, German
Prerequisites	C/C++/C# Knowledge/Python
Target Group	Developers Integrators

Article	Article N°
Training EOSPRINT / EOSCONNECT APIs	0105-0142

General

Getting familiar with the EOSPRINT SDK* and the EOSCONNECT Core API** to enable you for your integration usecase.

Objectives

- STL to product in a nutshell
- Exploration of EOSPRINT SDK
  - Overview and usecases
  - Coding samples
  - Live demo (EOS digital twin simulator)
- Exploration of EOSCONNECT Core API
  - Overview and usecases
  - Coding samples
  - Live demo (EOS digital twin simulator)

Content

Part 1 : **Introduction**
from STL over Job to Machine-Task
EOS digital twin simulator
Licensing model: Dongles and PrintDomain

Part 2 : **EOSPRINT SDK**
Overview SDK / usecases in scope
Hands-on SDK Sample app
Coding samples & live demo

Part 3: **EOSCONNECT Core API**
Overview API / usecases in scope
Exploration of RESTful api for historical data
Exploration of OPC/UA api for live data

*SDK: Software development kit: The software development kit provides a number of functions to interact with an EOS machine, to calculate tasks and previews.
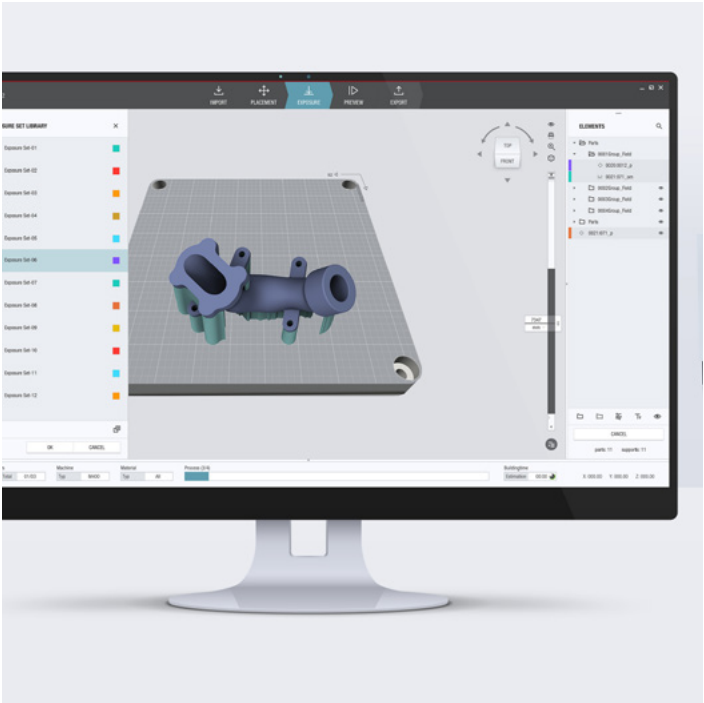
**API: Application programming interface: The programming interface allows you to lookup live and historical data of your jobs on your EOS machine.

Sale price (€)

4.600.–

Calibration Special:
Reference Point Calibration Initial set-up & Training

Venue	At your site
Duration	Initial Set-up: 2 days (excl. travelling days) Training: 1 day (excl. travelling days)
Participants	max. 4 participants
Languages	English, German, other languages to be agreed
Prerequisites	Installed Metal system
Target Group	Quality Engineers System Operators Data Preparation experts

Initial Set-up	Article N°
EOS M 280 EOS M 290	0105-0055

Training	Article N°
EOS M 280 EOS M 290	0105-0056

General

Be able to carry out absolute placement of parts for hybrid building and post machining, using EOS Reference Point Calibration functionality.

Package consist of

- Reference Point Calibration Initial Set-up
- Training Reference Point Calibration
- Both parts are needed to conduct Reference Point Calibration.

Reference Point Calibration Initial Set-up

- Alignment of machine co-ordinates system with co-ordinates system of fixture/clamping system which has to be taught in.
- Introduction into EOS Reference Point Calibration functionality

Training Reference Point Calibration

- Features in EOSPRINT
- Absolut Positioning
- Reference Point Calibration for Hybrid Building
- Integration into post machining process
- Machine Calibration & Teach-in Process
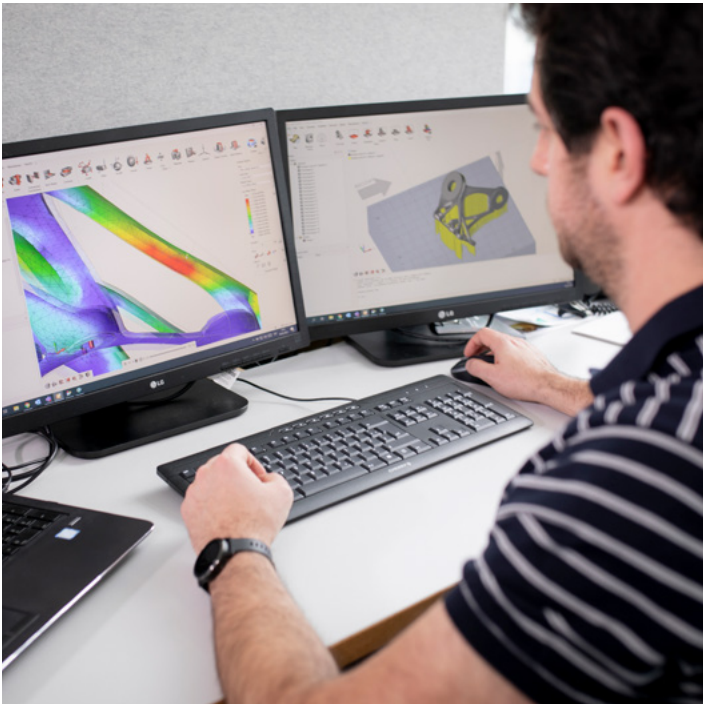
Sale price (€)

Initial Set-up

3.600.–

Training

1.920.–

Education Packages

System Sales Education Packages – deep learning

Volume customer

Recurring customer

New customer

Application Engineering
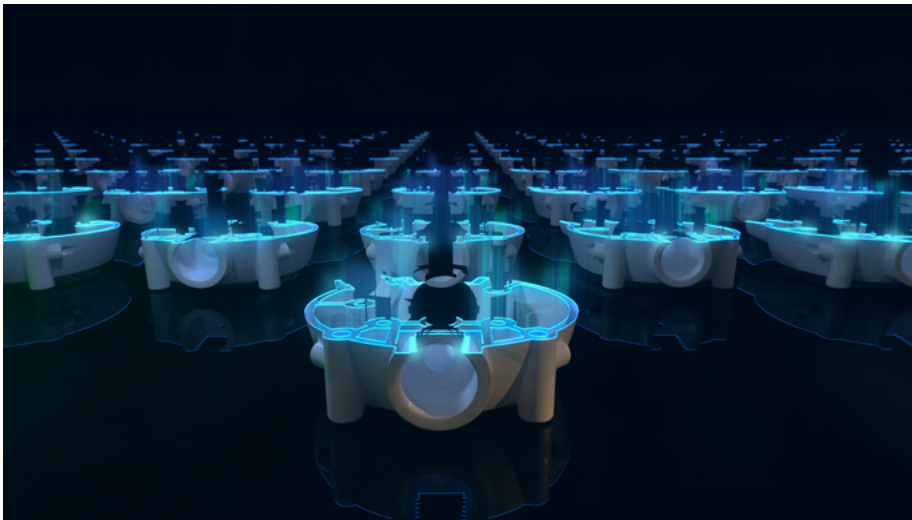
Data Preparation

Operation of EOS equipment

- **System Operation M-Systems:**
  @Onsite, @Maisach
- **System Operation P-Systems:**
  @Onsite, @Maisach
- **Application Eng. Deep Dive:**
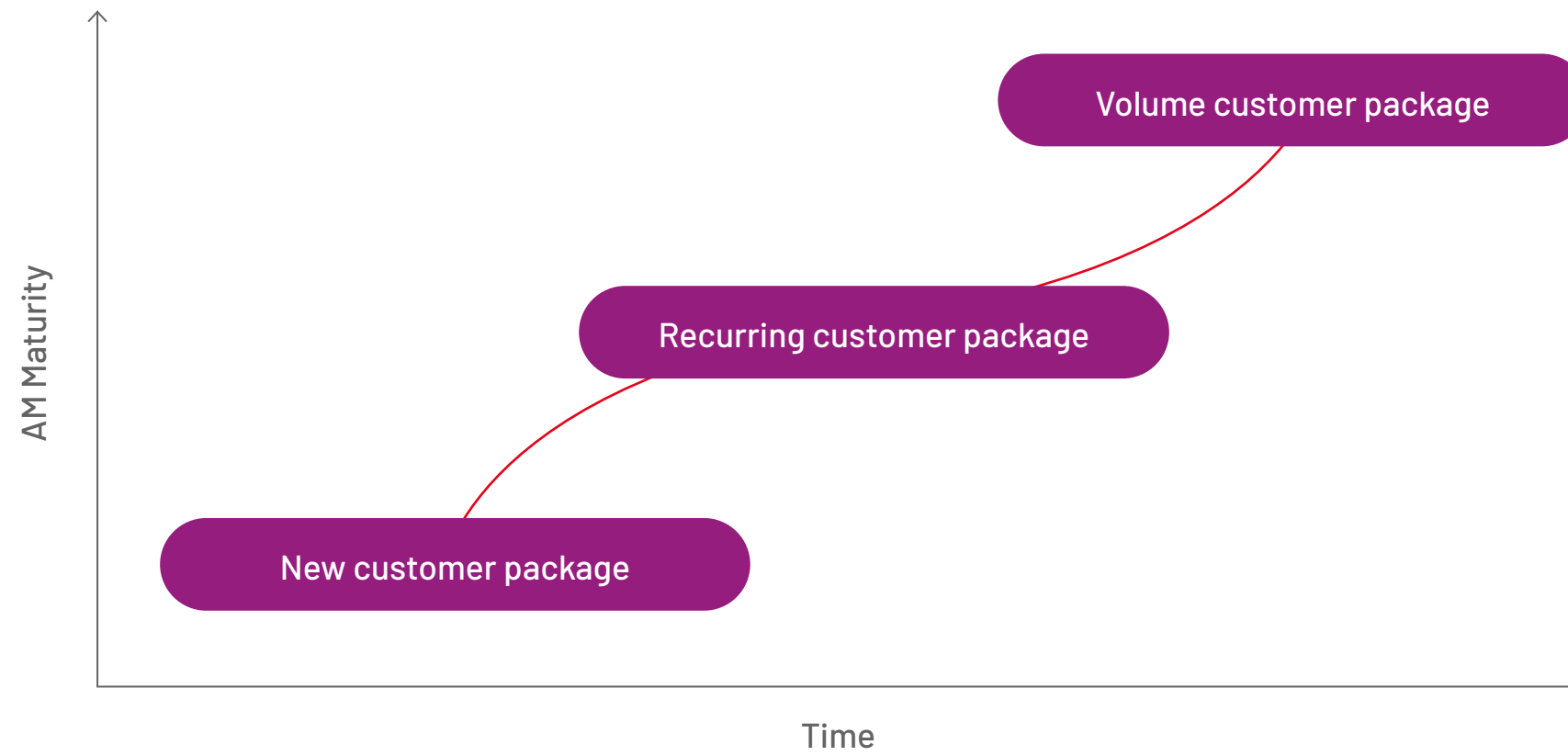 @Remote, @Krailling,
  @Düsseldorf, @Onsite

$\oplus$

- Learning Path "Data Preparation"
  (E-learning, Case Studies, expert sessions)
- 4 times the content compared to traditional data preparation training (deep learning)
- Superior content retention

$\oplus$

- Learning Path "Application Engineering"
  (E-learning, Case Studies, expert sessions)
- Advanced content such as simulation & temp. setting
- Includes Parameter Editor, Design for AM, and many more

Visit online

AM Maturity

Time

Volume customer package

Recurring customer package

New customer package

New Customer Package – Polymer

System Operation P-Systems

@Onsite

System and Duration (onsite)	Article number
FORMIGA P 110 (2.5 days)*	0105-0001
EOS P 396	0105-0002
EOS P 500	0105-0103
EOS P 760 (4 days)*	0105-0003
EOS P 770 (4 days)*	0105-0078
EOS P 810 (4.5 days)*	0105-0111

Application Engineering Deep Dive

@Remote, @Krailling, @Düsseldorf, @Onsite

System	Article number
FORMIGA P 110	
EOS P 396	
EOS P 770	500021070
EOS P 500	
EOS P 810	

Learning Path AM Data Preparation

(E-learning, Case Studies, expert sessions)

Package	Article number
Polymer	500012210

Learning Path AM Application Engineering

(E-learning, Case Studies, expert sessions)

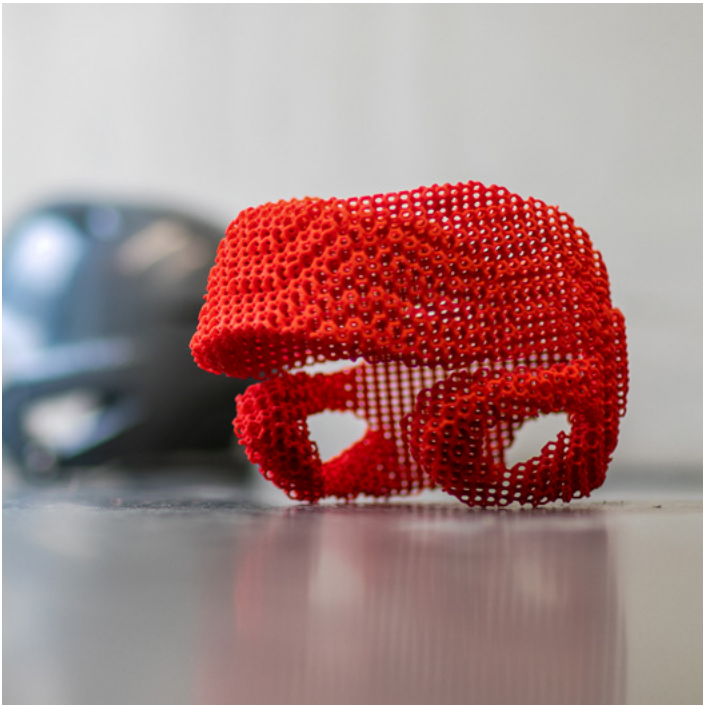| Package	Article number
Polymer	500012281

Perfect package for

New customers in Polymer

Focus on building up AM knowledge, realizing AM`s full potential and operation of EOS equipment, incl. data preparation.

? Any questions or uncertain regarding the portfolio?

Involve us, we are happy to support

Participant

4 person

Sale price (€)

app. 30.000,–

New Customer Package – Metal

System Operation M-Systems

@Onsite

System and Duration (onsite)	Article number
EOS M 100 (2 days)*	0105-0050
EOSINT M 270	0105-0045
EOSINT M 280	0105-0029
EOS M 290	0105-0039
EOS M 300-4 (3 days)*	0105-0117
EOS M 400 (3 days)*	0103-0021
EOS M 400-4 (3 days)*	0105-0074
AMCM M 290-1 1kW	500021774
AMCM M 290-2 400W	500018122
AMCM M 290-2 1kW	500018122

Application Engineering Deep Dive

@Remote, @Krailling, @Düsseldorf, @Onsite

System	Article number
EOS M 100	500021061
EOS M 290	
EOS M 300-4	
EOS M 400	500021062
EOS M 400-4	

Learning Path AM Data Preparation

(E-learning, Case Studies, expert sessions)

Package	Article number
Metal	500009554

Learning Path AM Application Engineering

(E-learning, Case Studies, expert sessions)

Package	Article number
Metal	500012280

Perfect package for

New customers in Metal

Focus on building up AM knowledge, realizing AM`s full potential and operation of EOS equipment, incl. data preparation.

? Any questions or uncertain regarding the portfolio?

✳ Involve us, we are happy to support

Visit online

Participant

4 person

Sale price (€)

app. 30.000,–

Recurring Customer Package – Polymer

System Operation P-Systems

@Onsite

System and Duration (onsite)	Article number
FORMIGA P 110 (2.5 days)*	0105-0001
EOS P 396	0105-0002
EOS P 500	0105-0103
EOS P 760 (4 days)*	0105-0003
EOS P 770 (4 days)*	0105-0078
EOS P 810 (4.5 days)*	0105-0111

Application Engineering Deep Dive

@Remote, @Krailling, @Düsseldorf, @Onsite

System	Article number
FORMIGA P 110	
EOS P 396	
EOS P 770	500021070
EOS P 500	
EOS P 810	

Learning Path AM Data Preparation

(E-learning, Case Studies, expert sessions)

Package	Article number
Polymer	500012210

Perfect package for

- already experienced
- existing customers and Key Accounts
- who invest in a new system
- train new staff
- would like to develop further
- or have more success with their systems

Focus on operation of EOS equipment as well as expanding application knowledge like part quality, part orientation, CPP or troubleshooting and data preparation.

? Any questions or uncertain regarding the portfolio?

※ Involve us, we are happy to support

Participant

4 person

Sale price (€)

app. 20.000,–

Recurring Customer Package – Metal

System Operation M-Systems

@Onsite

System and Duration (onsite)	Article number
EOS M 100 (2 days)*	0105-0050
EOSINT M 270	0105-0045
EOSINT M 280	0105-0029
EOS M 290	0105-0039
EOS M 300-4 (3 days)*	0105-0117
EOS M 400 (3 days)*	0103-0021
EOS M 400-4 (3 days)*	0105-0074
AMCM M 290-1 1kW	500021774
AMCM M 290-2 400W	500018122
AMCM M 290-2 1kW	500018122

Application Engineering Deep Dive

@Remote, @Krailling, @Düsseldorf, @Onsite

System	Article number
EOS M 100	500021061
EOS M 290	
EOS M 300-4	
EOS M 400	500021062
EOS M 400-4	

Learning Path AM Data Preparation

(E-learning, Case Studies, expert sessions)

Package	Article number
Metal	500009554

Perfect package for

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- or have more success with their systems

Focus on operation of EOS equipment as well as expanding application knowledge like part quality, part orientation, CPP or troubleshooting and data preparation.

? Any questions or uncertain regarding the portfolio?

✳ Involve us, we are happy to support
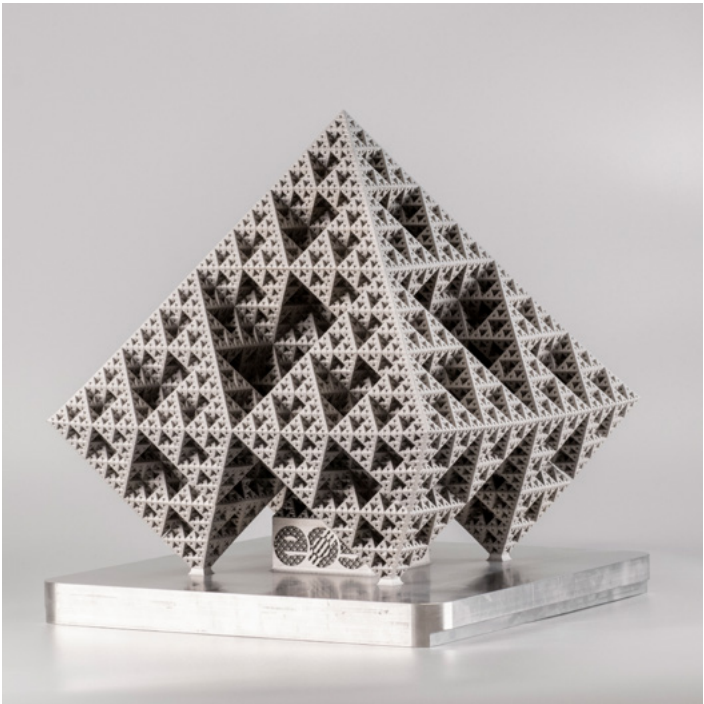
Participant

4 person

Sale price (€)

app. 20.000,–

Volume Customer Package – Polymer

System Operation P-Systems
@Onsite

System and Duration (onsite)	Article number
FORMIGA P 110 (2.5 days)*	0105-0001
EOS P 396	0105-0002
EOS P 500	0105-0103
EOS P 760 (4 days)*	0105-0003
EOS P 770 (4 days)*	0105-0078
EOS P 810 (4.5 days)*	0105-0111

Application Engineering Deep Dive
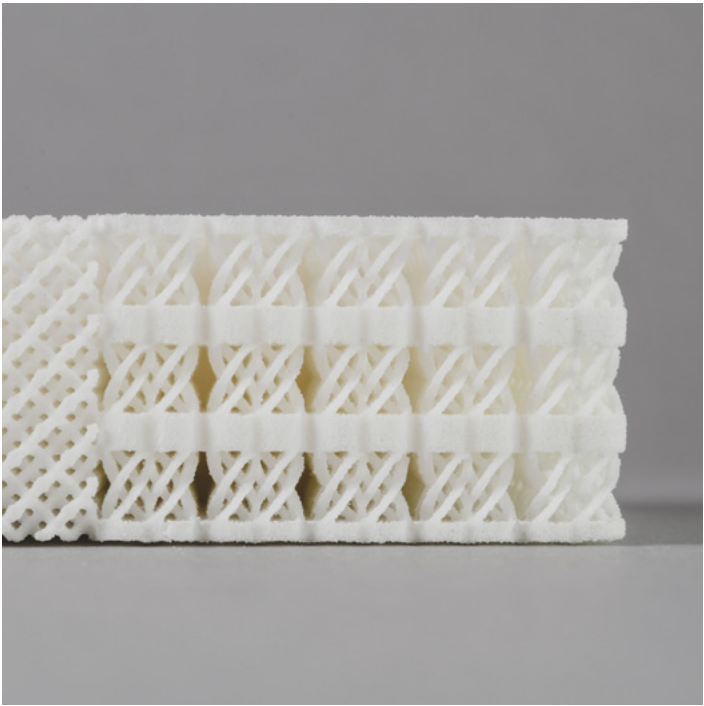@Remote, @Krailling, @Düsseldorf, @Onsite

System	Article number
FORMIGA P 110	
EOS P 396	
EOS P 770	500021070
EOS P 500	
EOS P 810	

Perfect package for

- already experienced
- existing customers and Key Accounts
- who invest in a new system
- train new staff
- would like to achieve production excellence
- needs to optimize production key figures

Focus on best-in-class operation of EOS equipment as well as expanding application knowledge like part quality, part orientation, CPP or troubleshooting.

? Any questions or uncertain regarding the portfolio?

✳ Involve us, we are happy to support

Participant

4 person

Sale price (€)

app. 10.000,–

Volume Customer Package – Metal

System Operation M-Systems
@Onsite

System and Duration (onsite)	Article number
EOS M 100 (2 days)*	0105-0050
EOSINT M 270	0105-0045
EOSINT M 280	0105-0029
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AMCM M 290-2 400W	500018122
AMCM M 290-2 1kW	500018122

Application Engineering Deep Dive
@Remote, @Krailling, @Düsseldorf, @Onsite

System	Article number
EOS M 100	500021061
EOS M 290	
EOS M 300-4	
EOS M 400	500021062
EOS M 400-4	

Perfect package for

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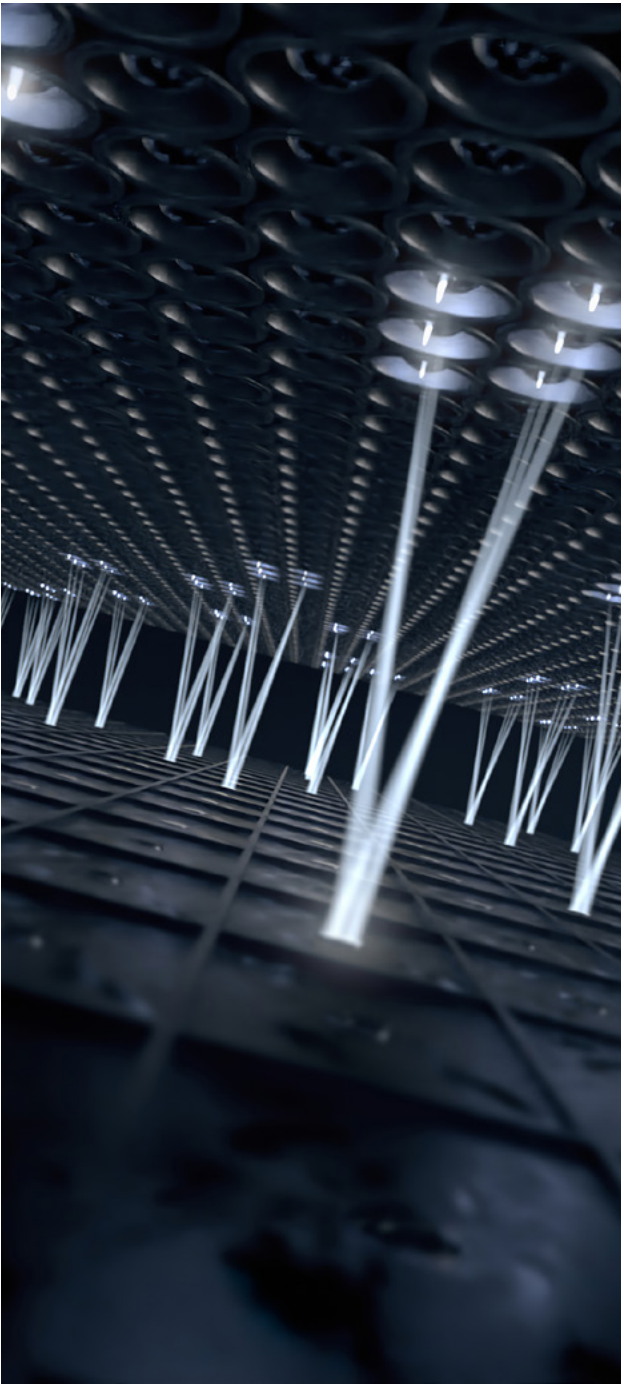
? Any questions or uncertain regarding the portfolio?

☀ Involve us, we are happy to support

Participant

4 person

Sale price (€)

app. 10.000,–

Special

Onsite Training – Application Engineering "Deep Dive" (Polymer/Metal)

Your expert training tailored exactly to your needs.

AE Deep Dive

@Onsite, @Krailling @Maisach

System and Duration	Article number
EOS M 100 EOS M 290 (2 days)	500021061
EOS M 300-4 EOS M 400 EOS M 400-4 (3 days)	500021062
EOS P 110 EOS P 396 EOS P 770 EOS P 500 EOS P 810 (2 days)	500021070

Polymer

- ☒ Introduction to PBF-LB
- ☒ Machine specific topics
- ☒ Data preparation: Orientation, Nesting
- ☒ EOSPRINT 2 - Parameter Editor
- ☒ Exposure types
- ☒ Basic design rules
- ☒ Process software
- ☒ Recap system operation
- ☒ Powder handling
- ☒ Post-Processing
  (Surface finishing, coloring)
- ☒ Part quality
- ☒ Part orientation
- ☒ Dimensional accuracy
- ☒ Cost per part / Application business case
- ☒ Troubleshooting
  (What to do when something goes wrong)
- ☒ Application job review with an expert
- ☒ Tips & Tricks

Metal

- ☒ Introduction to PBF-LB
- ☒ Machine specific topics
- ☒ Data preparation: Support, Orientation, Design
- ☒ EOSPRINT 2 - Parameter Editor
- ☒ Process simulation
- ☒ Using OT
- ☒ Simulation based Design
  (parametric or generative design, lattices, topology optimization, CFD)
- ☒ Post-Processing
  (Surface finishing, powder removal)
- ☒ Hybrid Building
- ☒ Multi-Laser exposure strategy
- ☒ Part quality
- ☒ Part orientation
- ☒ Dimensional accuracy
- ☒ Cost per part / Application business case
- ☒ Troubleshooting
  (What to do when something goes wrong)
- ☒ Application job review with an expert
- ☒ Smart Fusion
- ☒ Tips & Tricks

Objectives

Customer can compose their optimal training program from a selection of topics.

The training can thus cover the needs of exactly this customer in exactly his production environment.

Contents are discussed in a technical conversation with an application engineer.

The training overall can contain the following topics and will be adapted to the needs of the customer.

Sale price (€)

2 days training

3.840,–

3 days training

5.760,–