



# **APO** Qualification Procedures

MTM ASSOCIATION e. V.

2020\_A

## **Imprint**

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## 1 Preamble

The globally uniform dissemination of the MTM method – the performance standard for human work based on the MTM Standard Performance and the internationally acknowledged training standards MTM- and EAWS-Practitioner as well as MTM- and EAWS-Instructor – is one of the essential tasks of MTM ASSOCIATION e. V. (MTMA).

This requires high quality training to be performed throughout the world, which is achieved and guaranteed by globally uniform admission requirements (AR), training materials, rules, and syllabi.

For MTMA a globally acknowledged training standard is based on

- the standardized and worldwide acknowledged Reference Performance Consistency, and clearly defined application rules and calculation instructions,
- clearly defined trainings that are universally comparable with respect to admission requirements and degrees (certificates), scope or duration of the individual training measure, training materials, and didactic tools, such as repetition exercises, films, and examinations,
- clearly defined and universally comparable degrees, such as the “Blue Card” for MTM-Practitioners and EAWS-Practitioners, and the “Green Card” for MTM-Instructors and EAWS-Instructors,
- guaranteed availability and multilingualism of all qualification measures offered,
- clearly defined quality requirements on instructors (contents and accomplishment of the qualification as instructor), as well as guaranteed high quality,
- the initiation and continuation of an experience exchange between MTM and EAWS users, and
- the international publicity of the MTM methodology and the related training measures and degrees, as well as its worldwide dissemination and a great number of users.
- 

The Qualification Procedures of MTMA are an absolutely crucial basis for the implementation of these training standards. They define or create, for example, the currently valid admission requirements, the training principles, the training and examination materials, as well as the currently valid valuation guidelines.

The Qualification Procedures are decided on by the Examination Board of MTMA, i.e. by MTM experts and active MTM-Instructors from the member companies of MTMA. The Examination Board is the highest body to secure the national and international training standards.



In the trainings standardized training materials are used. As a **standard, MTM** provides the **participant** with

- a training manual,
- forms,
- data card(s),
- daily repetition exercises, and
- an examination, and

the **instructor** with

- a presentation,
- films (training/ exam),
- a syllabus,
- solutions to the problems in the manual,
- solutions to the repetition exercises,
- solutions to the training films,
- solutions to the examination questions, and
- solutions to the examination films.

## 2 Introduction

All qualifications can be gained in either public or in-house trainings. Admission requirements, procedure during the course, and examination are identical for all variants. The Qualification Procedures (APO) describe the valid admission requirements, the principles of qualification, teaching contents and learning objectives, the training manuals and examination papers, as well as the currently valid evaluation principles for the individual training measures.

### *Gender equality*

*For the benefit of improved readability, gender-related terms referring to both female and male persons will be used in the male form only in these Qualification Procedures, as well as in all training materials published by MTMA. So, for example "participant" will be spoken of as "he" even if it refers to a female. This is BY NO MEANS to imply a defiance of gender equality or an infringement of the principle of equality.*





## 2.1 Training Offered by the MTM ASSOCIATION e. V.

Teaching contents	Admission requirements (Certificate in the stated training)	Duration in h	
<b>MTM-Practitioner</b>			"Blue Card" (MTM)
MTM-1 Base (on-site or e-learning)	None	40	
MTM-1	MTM-1 Base	40	
MTM-HWD	MTM-1 Base	40	
MTM-SD	MTM-1 Base (MTM-1 recommended)	40	
MTM-2	MTM-1 Base	40	
MTM-UAS	MTM-1 Base	40	
MTM-Logistics	MTM-1 Base	40	
MTM-Logistics (Standard Operations)	One process building block system (MTM-UAS recommended)	20	
MTM-MEK	MTM-1 Base	40	
C-Values	MTM-1 Base, MTM-SD (minimum 2 days)	40	
MTM-Practitioner	MTM-1 Base and MTM-1 or MTM-HWD or MTM-SD or MTM-2 or MTM-UAS or MTM-Logistics or MTM-MEK or C-Values	40	
MTM-Practitioner Refresher MTM-1, MTM-HWD, MTM-SD, MTM-2, MTM-UAS, MTM-Logistics, MTM-MEK or C-Values	"Blue Card" (MTM) and mandatory analyses in the respective MTM process building block system in accordance with Appendix 1 of APO.	20	
<b>EAWS-Practitioner</b>			"Blue Card" (EAWS)
EAWS	None	40	
EAWS-Practitioner	EAWS	40	
EAWS-Practitioner Refresher	"Blue Card" (EAWS) and mandatory analyses in accordance with Appendix 3 of APO.	20	
<b>MTM-Instructor</b>			"Green Card"
MTM-Instructor	MTM-1 plus a certificate in one of the following training courses: MTM-HWD, MTM-SD, MTM-2, MTM-UAS, MTM-MEK, EAWS, C-Values, valid "Blue Card" (MTM), and minimum one year of practical experience, mandatory analyses <sup>1</sup>	40	
License Course MTM-1	MTM-1, MTM-Instructor, mandatory analyses <sup>1</sup>	20	
License Course MTM-HWD	MTM-HWD, MTM-Instructor, mandatory analyses <sup>2</sup>	20	
License Course MTM-SD	MTM-SD, MTM-Instructor, mandatory analyses <sup>1</sup>	20	
License Course MTM-2	MTM-2, MTM-Instructor, mandatory analyses <sup>1</sup>	20	
License Course MTM-UAS	MTM-UAS, MTM-Instructor, mandatory analyses <sup>1</sup>	20	
License Course MTM-MEK	MTM-MEK, MTM-Instructor, mandatory analyses <sup>1</sup>	20	
License Course C-Values	MTM-SD, C-Values, MTM-Instructor, valid teaching license for MTM-SD, mandatory analyses <sup>1</sup>	20	
License Course MTM-Practitioner	Valid teaching license for the required MTM process building block system	8	
EAWS-Instructor	One process building block system (recommended: MTM-UAS), valid "Blue Card" (EAWS), minimum one year of practical experience, mandatory analyses as specified in Appendix 3 of APO	40	
License Course EAWS	EAWS-Instructor, mandatory analyses as specified in Appendix 3 of APO	24	
<b>Further Trainings</b>			
ProKon	None	16	
Process Architecture	MTM-1 Base and a certificate in one of the following trainings: MTM-1, MTM-HWD, MTM-SD, MTM-2, MTM-UAS, MTM-MEK or C-Values	24	
MTM eHPV-Expert	MTM-1 Base and MTM-UAS	24	
MTM and Value Stream	None (basic knowledge of MTM recommended)	24	
MTM Visual Inspection	None (MTM-1 Base recommended)	24	
Basics of Ergonomics	None	24	
Basic MTM (MTM-1 and MTM-UAS)	Matriculation	100	

<sup>1</sup> The mandatory analyses have to be created in the respective process building block system in accordance with Appendix 2 of APO (e. g. the mandatory analyses for the license course MTM-UAS have to be created with MTM-UAS).

## 2.2 List of Abbreviations

<b>Abbreviation</b>	<b>Training</b>
APO	Qualification Procedures
BMW SD	BMW Standard Data
C-Values	Daimler MB Planned Time Values
EAWS	Ergonomic Assessment Worksheet
EAWS-Practitioner	Ergonomic Assessment Worksheet Practitioner
MTM	Methods-Time Measurement
MTM-1	MTM-1
MTM-1 Base	MTM-1 Base (on-site attendance or e-learning)
MTM-2	MTM-2
MTMA	MTM ASSOCIATION e. V.
MTM-eHPV Expert (MTM-eHPV)	MTM engineered Hours Per Vehicle Expert
MTM-HWD	MTM Human Work Design
MTM-LOG	MTM-Logistics
MTM-MEK	MTM for One-of-a-Kind and Small Variable Batch Production
MTM-PA	Process Architecture
MTM-PRA	MTM-Practitioner
MTM-SD	MTM Standard Data
MTM-SOL	The MTM Standard Operations Logistics
MTM-UAS	MTM Universal Analyzing System
MTM-VI	MTM Visual Inspection
MTM-VS	MTM and Value Stream
PEP	Product Engineering Process
ProKon	Production-Oriented Design

MTM-1, MTM-2, MTM-UAS, MTM-MEK, MTM-SD, MTM-HWD und EAWS are registered trademarks of MTM ASSOCIATION e. V. All rights reserved.

### **3 Principles of Training and Examination**

The Examination Board of MTMA enacts, rescinds, complements, changes, or adjusts the guidelines related to both MTM training measures and the creation of examination papers. For decision-making a simple majority of votes of the members of the Examination Board present is sufficient.

As of June 1, 2020, the following guidelines apply.

#### **3.1 Transitional Provisions for International MTM Trainings**

Due to the fact that all MTM training measures (MTM-Practitioner and MTM-Instructor) world-wide are currently embedded in the training scheme of MTMA, its management will be entitled to develop and apply appropriate standards for the acknowledgement of MTM trainings attended abroad or MTM certificates received abroad. In case of doubt, a decision will be made by the Examination Board.

#### **3.2 General Remarks**

The successful termination of an MTMA training will be confirmed by the issuance of a certificate, provided that all admission requirements were met.

The Admission requirements (AR) define the formally required criteria for the issuance of a full-value certificate for the corresponding training. If not all admission requirements have been met or if the training was not terminated successfully a confirmation of participation will be issued.

For workshops confirmations of participation will be issued (if required or on request).

All these training measures are based on and in line with the syllabi issued by the Examination Board.

MTMA assigns licensed instructors to carry through public trainings.

Candidates who missed more than 30 % of the training, due to bad health or for other reasons, cannot complete the training successfully and will not receive a confirmation of participation.

Public and in-house trainings are designed for on-site attendance, as webinars, or as e-learning. Coaching on the job is available exclusively in-house.

The hours stated under "Duration of training" represent minimum requirements.

### 3.3 Trainings with Examination and their Scoring

The examination at the end of a training course is normally done in written, either in the class room or online.

The examination consists of

- multiple-choice questions or questions that require written answers,
- analyses to be created based on a film or a written job description, and
- oral parts, such as the presentation of work results from preceding group or individual work.

The Examination Board of MTMA releases the examination tasks.

In classes that require personal presence, examinations are carried out under supervision. The written exam in both public and in-house trainings is supervised by the instructor (person conducting the training) or by a member of the Examination Board or by another person authorized by MTMA. The supervising person is responsible for the correct execution of the exam.

Candidates who did not attend an acknowledged MTM training may also take the exams in the MTM process building block systems, if they can prove that they gained the required knowledge and skills in another way (e. g. self-study followed by a few months of successful practical application). The Examination Board may decide on an additional oral exam for these candidates.

The management of MTMA has the right to send a delegate from its Examination Board to every examination.

If, as an exception, an oral exam is required, this exam will be conducted by a member of the Examination Board or by another person authorized by MTMA.

The management of MTMA has the right to define specific regulations for conducting and supervising examinations, if required by, for example, the use of web conference tools and the like.

For in-house examinations, the instructor has to inform the MTM Academy about the date of examination and hand in a list of candidates no later than 3 weeks before the training starts. Normally, a sealed envelope with the examination questions will be sent together with the training materials to the ordering person or department. It is recommended to open the envelope only at the beginning of the exam, in the presence of the candidates. All examination papers received have to be returned to the management of MTMA for scoring; normally, they are sent back on the day of the exam.

Scoring will be done by a member of the Examination Board or by an expert authorized by the Examination Board of MTMA. As a rule, MTMA will inform the instructor, the individual participant, or the ordering person or department about the examination results as soon as possible upon receipt of the scored exam papers.

The exam papers will be retained by MTMA for 6 months as of the date of examination. The period of retention for examination results is 10 years.

The Examination Board specifies the total score for every examination, as well as the minimum score for a "pass". The certificate is proof of the diploma holder's expertise. This evaluation standard (achieving 75 out of 100 %) is valid for all MTM examinations.

Should a candidate fail to achieve the minimum score, he will receive a neutral confirmation of participation instead of a certificate. In addition, the candidate may repeat the exam (written or oral) within the next six months. An informal application is sufficient. The repetition of an exam is subject to charges.

Should the candidate have failed twice to achieve the required result in this exam, the Examination Board of MTMA will decide in the given case on the necessity for the repetition of training.

Access to the examination papers is allowed only on the premises of MTMA and is subject to charges. In principle, examination papers are not handed out to the candidate or any other person.

### **3.4 On-Site Attendance Courses, Webinars, or E-Learning**

Public and in-house trainings either require personal presence or are offered as webinars, and are taught by a licensed MTM-Instructor in accordance with the currently valid Qualification Procedures of MTMA.

Selected trainings are available as e-learning and are also subject to the currently valid Qualification Procedures of MTMA. The participant has to complete these trainings self-reliantly.

### **3.5 Coaching on the Job**

The trainings for MTM-Practitioner and EAWS-Practitioner may also be done as Coaching on the Job. They are carried through solely in-house, in the form of individual or small group coaching with a maximum of three participants. They are part of a real company project on design or improvement. Coaching on the job ends with the presentation of the project results and an examination.

Both the participant and his company benefit from this type of training: the participant gains extensive methodological knowledge and – quasi as a side benefit – the “Blue Card”. The company benefits from a qualified employee and from the fact that the coaching itself already reveals concrete design and improvement potentials.

Experienced instructors of MTMA give a helping hand in imparting knowledge in work method design, as well as directly in the design project, or in applying the MTM method. The problems to be worked on in the company have to be agreed with the experts from MTMA prior to the start of the coaching. The project will be finalized by the presentation of results. The presentation will be graded by the instructor. The examination is the final step to be taken. Having passed the exam for MTM-Practitioner or EAWS-Practitioner the participant will receive the “Blue Card”.

### **3.6 Trainings without Examination**

These trainings require the student’s active participation during the training itself, as well as in the group work on case studies or in business games. Participation will be confirmed by a certificate – provided that all necessary admission requirements were met, if applicable.

### **3.7 Workshops**

Workshops, such as e. g. the Introduction to MTM, may be taught both public and, on request, in-house. There are no admission requirements. The main subjects of and the dates for public workshops are published on the internet in due time: <https://platform.dmtm.com/>

#### **Procedure**

Public as well as in-house workshops are taught in accordance with the Qualification Procedures of MTMA by either an instructor who is full-time employed by MTMA or a member of or a person authorized by the management of MTMA.

#### **Training materials**

The training manual consists of a hand-out, published by MTMA for the respective training measure. Further training materials comprise, for example, a presentation, the MTM training box, or the software program TiCon.

#### **Duration of training**

A workshop takes minimum 8 hours.

#### **Score**

On request, the participants receive a confirmation of participation.

## 4 MTM- and EAWS-Practitioner

### 4.1 Qualification as MTM-Practitioner

The qualification as MTM-Practitioner (see Illustration 1) addresses employees, professional and managerial staff as well as representatives from the works council and various other interest groups.

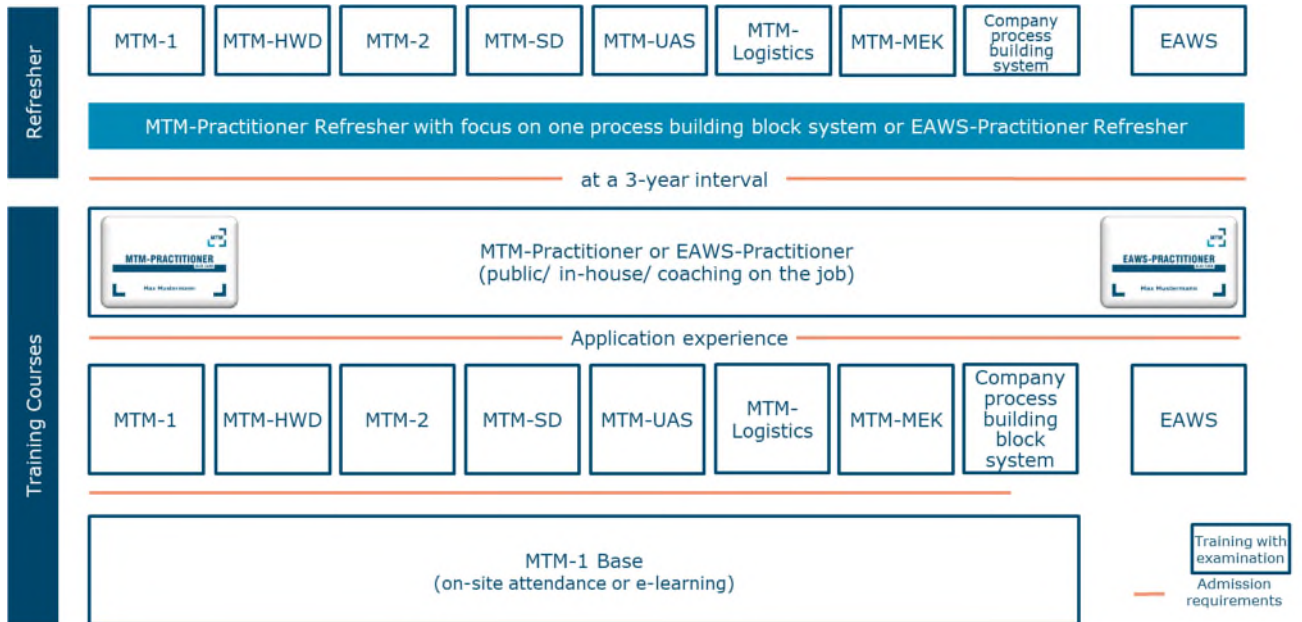


Illustration 1: Structure of the Training for MTM-Practitioner und EAWS-Practitioner

The qualification as MTM-Practitioner starts with the training in MTM-1 Base. The completion of MTM-1 Base entitles the candidate solely to participate in the training of an MTM process building block system. It is followed by the training in at least one MTM process building block system. Based on the knowledge acquired in the MTM process building block systems (PBBS), the training for MTM-Practitioner concentrates on product and process design in operational practice.

Prior to the participation in the training for MTM-Practitioner it is necessary to gain practical experience.

On the successful completion of all required trainings the applicant will receive the “Blue Card” (MTM), the internationally acknowledged qualification certificate for MTM-Practitioners. The “Blue Card” is valid for three years.

It can be renewed by the successful completion of the MTM-Practitioner Refresher training with focus on one process building block system. The “Blue Card” (EAWS) can be renewed by the successful completion of the EAWS-Practitioner Refresher training.

#### 4.1.1 MTM-1 Base

##### Admission requirements

There are no admission requirements.

##### Subject

The training in MTM-1 Base imparts knowledge of and skills in the application of MTM-1, and explains the importance of the use of the individual MTM process building block systems.

##### Contents

- Historical development of MTM
- The importance of the Framework of MTM Process Building Block Systems
- MTM Basic Motions (limitation as to content and influencing factors), their practical application, and their importance for higher aggregated MTM process building block systems
- Rules for the consistent and correct use of the process building block system MTM-1
- Initial practical exercises to reduce the number of application errors or to consolidate the correct application of the process building block system MTM-1
- MTM degrees ("Blue Card" and "Green Card") and their national and international significance

##### Learning objectives

The participant **knows**:

- the development and the structure of MTM-1,
- the areas of application of MTM-1 and the prerequisites for its use,
- the classification of MTM-1 in the Framework of the MTM Process Building Block Systems (general manufacturing environment), in which areas it is applied, in which respect it is similar to and in which it differs from other MTM process building block systems,
- the MTM Basic Motions and their fundamental significance for the higher aggregated MTM process building block systems,
- the essential degrees in MTM training ("Blue Card" and "Green Card") and their national and international significance, and
- other MTM methods, such as ProKon and EAWS, as well as MTM tools, e.g. TiCon, and their importance and application in PEP.



The participant **is able to**:

- read MTM-1 analyses and has gained initial experience in writing MTM-1 analyses, as well as in the application of the MTM-1 rules,
- use MTM-1 and gains initial experience in
  - planning and designing work methods, work processes, and workplaces,
  - shaping work contents (i.e. describe and assess them), and
  - improving existing work systems,
- explain the MTM Basic Motions and their fundamental significance for the higher aggregated MTM process building block systems,
- select the MTM process building block system most appropriate in his professional environment, and
- assess from which further training measures he will benefit most in his profession.
- 

### **Procedure**

Webinars, on-site attendance and e-learning trainings in MTM-1 Base end with an examination composed by MTMA. On-site attendance courses may be taught in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3) by a licensed MTM-Instructor only.

As a rule, the number of participants is restricted to 20. Exceptions require prior written consent by the management of MTMA.

### **Training materials**

The mandatory training materials consist of the MTM-1 manual, the MTM-1 data card (MTM Standard Times data card), daily repetition exercises, and various forms, all published by MTMA. Further teaching aids are the manual-related presentation, the MTM training box, the software TiCon, and films, which are provided together with the related work system descriptions, in accordance with the syllabus.

### **Duration of training**

Non-e-learning training for MTM-1 Base takes 40 hours.

### **Examination**

The training in MTM-1 Base ends with a written examination. As an exception, the Examination Board may order an additional oral exam. The examination conditions are defined in par. 3.3.

### **Certificate**

Having passed the MTM-1 Base exam the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.

#### 4.1.2 MTM-1

##### Admission requirements

To be admitted to the training in MTM-1 (MTM Basic System) the applicant has to have passed the MTM-1 Base exam.

##### Subject

The training in MTM-1 imparts knowledge of and skills in the application of MTM-1, and explains the importance of the use of the individual MTM process building block systems.

##### Contents

- Consolidation of the rules for the consistent and correct use of the process building block system MTM-1
- Practical exercises to reduce the number of application errors or to consolidate the correct application of the process building block system MTM-1
- The creation of an analysis and synthesis of work processes with the MTM-1 process building blocks
- MTM degrees ("Blue Card" and "Green Card") and their national and international significance

##### Learning objectives

The participant **knows**:

- how to proceed in and which documents to use for the creation of planning and production analyses with the process building block system MTM-1,
- the essential degrees in MTM training ("Blue Card" and "Green Card") and their national and international significance, and
- other MTM methods, such as ProKon and EAWS, as well as MTM tools, for example Ti-Con, and their importance and application in PEP.

The participant **is able to**:

- create MTM-1 analyses independently and masters the MTM-1 rules,
- use MTM-1 correctly in practice, in particular to
  - plan and design work methods, work processes, and workplaces,
  - shape work contents (i.e. describe and assess them), and
  - improve existing work systems,
- explain the MTM Basic Motions and their fundamental significance for the higher aggregated MTM process building block systems,
- select the MTM process building block system most appropriate in his professional environment, and
- assess from which further training measures he will benefit most in his profession.

**Procedure**

Public as well as in-house trainings in MTM-1 end with an examination composed by MTMA. They may be taught in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3) by a licensed MTM-Instructor only.

As a rule, the number of participants is restricted to 20. Exceptions require prior written consent by the management of MTMA.

**Training materials**

The mandatory training materials consist of the MTM-1 manual, the MTM-1 data card (MTM Standard Times data card), daily repetition exercises, and various forms, all published by MTMA. Further teaching aids are the manual-related presentation, the MTM training box, the software TiCon, and films, which are provided together with the related work system descriptions, in accordance with the syllabus.

**Duration of training**

The training in MTM-1 takes 40 hours.

**Examination**

The training in MTM-1 ends with a written examination. As an exception, the Examination Board may order an additional oral exam. The examination conditions are defined in par. 3.3.

**Certificate**

Having passed the MTM-1 exam the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.

### 4.1.3 MTM-HWD (Human Work Design)

#### Admission requirements

To be admitted to the training in MTM-HWD the applicant has to have passed the MTM-1 Base exam. Basic knowledge of ergonomics is recommended.

#### Subject

The training in MTM-HWD imparts knowledge of and skills in the application of the process building block system MTM-HWD.

#### Contents

- Development of MTM-HWD
- MTM-HWD terminology and description form
- Actions, their limitations and influencing factors
- Rules for the consistent and correct use of the process building block system MTM-HWD
- Practical exercises to consolidate the correct application of the process building block system MTM-HWD
- Creation of analyses and synthesis of work processes with the MTM-HWD process building blocks for ideal design
- Using the MTM-HWD terminology to classify the results (e. g. ergonomic assessment with EAWS)

#### Learning objectives

The participant **knows**:

- the spirit and purpose of process descriptions,
- the structure of MTM-HWD, in particular the MTM-HWD actions and influencing factors,
- how to model a process with MTM-HWD, and
- how to create and use an MTM-HWD modeling template.

The participant **is able to** apply MTM-HWD in practice, in particular to:

- plan and design work methods, work processes, and workplaces,
- describe and evaluate work content, and
- improve existing work systems.

#### Procedure

Public as well as in-house trainings in MTM-HWD end with an examination composed by MTMA. They may be taught in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3) by a licensed MTM-Instructor only.

As a rule, the number of participants is restricted to 12. Exceptions require prior written consent by the management of MTMA.

**Training materials**

The mandatory training materials consist of the manual MTM-HWD, the MTM-HWD description form, and the influencing factors card, all published by MTMA. Further teaching aids are the manual-related presentation, the MTM training box, software for the application of MTM-HWD, and films, all of which are provided together with the related information or task descriptions of the work systems, in accordance with the syllabus.

**Duration of training**

The training in MTM-HWD takes 40 hours.

**Examination**

The training in MTM-HWD ends with a written examination. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

**Certificate**

Having passed the MTM-HWD exam the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.

#### 4.1.4 MTM-SD

##### Admission requirements

To be admitted to the training in MTM-SD (MTM Standard Data) the applicant has to have passed the MTM-1 Base exam. The MTM-1 certificate is recommended.

##### Subject

The training in MTM-SD imparts knowledge of the content and structures of the MTM-SD process building block system and trains the skills required for its practical application.

##### Contents

- The process building block system MTM-SD and its construction principles.
- The principles underlying the development and structure of the Standard Data Basic Values (SD-BV) and the General Purpose Data
- Rules for the consistent and correct use of the process building block system MTM-SD
- Practical exercises to consolidate the gained knowledge

##### Learning objectives

The participant **knows**:

- the MTM-SD process building block system and its development,
- the classification of MTM-SD in the Framework of the MTM Process Building Block Systems,
- the principles applied in the development of the process building block system of the Standard Data Basic Values,
- the principles applied in the development of the General Purpose Data, and
- the application requirements for and application areas of MTM-SD.

The participant **is able to** apply MTM-SD in practice, in particular to:

- structure, plan, and design processes and work systems,
- describe and evaluate work content,
- improve existing work systems, and
- create and describe company-specific process building blocks.

##### Procedure

Public as well as in-house trainings in MTM-SD end with an examination composed by MTMA. They may be taught in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3) by a licensed MTM-Instructor only.

As a rule, the number of participants is restricted to 20. Exceptions require prior written consent by the management of MTMA.

**Training materials**

The mandatory training materials consist of the MTM-SD manual, the data card of the MTM-SD Basic Values, the data cards of the General Purpose Data, daily repetition exercises, and various forms, all published by MTMA. Further teaching aids are the manual-related presentation, the MTM training box, the software TiCon, and films, which are provided together with the related work system descriptions, in accordance with the syllabus.

**Duration of training**

The training in MTM-SD takes 40 hours.

**Examination**

The training in MTM-SD ends with a written examination. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

**Certificate**

Having passed the MTM-SD exam the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.

#### 4.1.5 MTM-2

##### Admission requirements

To be admitted to the training in MTM-2 the applicant has to have passed the MTM-1 Base exam.

##### Subject

The training in MTM-2 imparts basic knowledge of the theory of the process building block system MTM-2 and develops the skills required for its application.

##### Contents

- The process building block system MTM-2 and its development
- The principles underlying the development and structure of MTM-2
- The rules for the consistent and correct use of the process building block system MTM-2
- Practical exercises to consolidate the gained knowledge

##### Learning objectives

The participant **knows**:

- the process building block system MTM-2 and its development,
- the classification of MTM-2 in the Framework of the MTM Process Building Block Systems,
- the principles applied in the development of the MTM-2 process building block system, and
- the application requirements for and application areas of MTM-2.

The participant **is able to** apply MTM-2 in practice, in particular to:

- structure, plan, and design processes and work systems,
- describe and evaluate work content,
- improve existing work systems, and
- create and describe company-specific process building blocks.
- 

##### Procedure

Public as well as in-house trainings in MTM-2 end with an examination composed by MTMA. They may be taught in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3) by a licensed MTM-Instructor only.

As a rule, the number of participants is restricted to 20. Exceptions require prior written consent by the management of MTMA.

##### Training materials

The mandatory training materials consist of the MTM-2 manual, the MTM-2 data card, daily repetition exercises, and various forms, all published by MTMA. Further teaching aids are the manual-related presentation, the MTM training box, the software TiCon, and films, which are provided together with the related work system descriptions, in accordance with the syllabus.



**Duration of training**

The training in MTM-2 takes 40 hours.

**Examination**

The training in MTM-2 ends with a written examination. As an exception, the Examination Board may order an additional oral examination. Scoring is done in accordance with par. 3.3.

**Certificate**

Having passed the MTM-2 exam the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.

#### 4.1.6 MTM-UAS

##### Admission requirements

To be admitted to the training in MTM-UAS (Universal Analyzing System) the applicant has to have passed the MTM-1 Base exam.

##### Subject

The training in MTM-UAS imparts knowledge of the content and structures of the MTM-UAS process building block system for batch production, consisting of the MTM-UAS basic operations and the MTM-UAS standard operations, and trains the skills required for its practical application.

##### Contents

- The process building block system MTM-UAS and its development
- Principles of the development, as well as knowledge of the structure and content of the MTM-UAS basic operations and the MTM-UAS standard operations
- Rules for the consistent and correct use of the process building block system MTM-UAS
- Practical exercises to consolidate the gained knowledge

##### Learning objectives

The participant **knows**:

- the process building block system MTM-UAS and its development,
- the classification of MTM-UAS in the Framework of the MTM Process Building Block Systems,
- the relevance of the method level in process type 2 and its influencing factors,
- the application requirements for and application areas of MTM-UAS, and
- the principles underlying the development and description of the standard operations in batch production.

The participant **is able to use** the process building block system **MTM-UAS** in practice, in particular to:

- structure, plan, and design processes and work systems,
- describe and evaluate work content,
- identify design potential for planning and improving processes and work systems, and
- create and describe company-specific process building blocks.

##### Procedure

Public as well as in-house trainings in MTM-UAS end with an examination composed by MTMA. They may be taught in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3) by a licensed MTM-Instructor only.

As a rule, the number of participants is restricted to 20. Exceptions require prior written consent by the management of MTMA.

**Training materials**

The mandatory training materials consist of the MTM-UAS manual (including the back-up analyses of the UAS standard operations), the MTM-UAS data cards of both the basic operations and the standard operations, daily repetition exercises, and various forms, all published by MTMA. Further teaching aids are the manual-related presentation, the MTM training box, the software TiCon, and films, which are provided together with the related work system descriptions, in accordance with the syllabus.

**Duration of training**

The training in MTM-UAS takes 40 hours.

**Examination**

The training in MTM-UAS ends with a written examination. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

**Certificate**

Having passed the MTM-UAS exam the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.

#### 4.1.7 MTM-Logistics

The MTM-Logistics Standard Operations were developed from the process building block system MTM-UAS.

##### **Admission requirements**

To be admitted to the training in MTM-Logistics the applicant has to have passed the MTM-1 Base exam.

##### **Subject**

In the training the participants acquire knowledge of and skills in planning, designing, and optimizing logistical processes. They also gain practical experience in using the MTM-Logistics process building blocks, which were developed on the hierarchic levels of Operation Steps and Operation Sequences in combination with the process building block system MTM-UAS. It is essential that the participant is made familiar with logistics-specific procedures and tools so that he can use them appropriately together with the MTM method to solve time-management tasks in the field of logistics. Apart from teaching theoretical basics, the imparted knowledge is deepened by working on practical examples.

##### **Contents**

- The process building block system MTM-UAS and its development
- Principles of the development, as well as knowledge of the structure and content of the MTM-UAS Basic Operations and the MTM-UAS Standard Operations
- Rules for the consistent and correct use of the MTM-UAS Basic Operations
- Principles of the development, as well as knowledge of the structure and content of the MTM-Logistics Standard Operations
- Rules for the consistent and correct use of the MTM-Logistics Standard Operations
- Optimization and design of logistics processes

##### **Learning objectives**

The participant **knows**:

- the advantages of the MTM application in logistics,
- the classification of MTM-Logistics Standard Operations in the Framework of the MTM Process Building Block Systems,
- the basics of storage and transmission systems in order to select the system most appropriate with respect to methods planning, and
- the principles underlying the development and description of the MTM process building blocks for logistics processes.

The participant **is able to** apply the MTM-Logistics Standard Operations in practice, in particular to:

- structure, plan, and design logistics processes and work systems,
- describe and evaluate work content in logistics, using the MTM-Logistics Standard Operations,
- create and describe company-specific process building blocks in logistics, and
- identify design potentials for planning and improve logistics processes and logistics work systems.

### **Procedure**

Public as well as in-house trainings are taught in accordance with the currently valid Qualification Procedures of MTMA by either an instructor who is full-time employed by MTMA or a member of or a person authorized by the management of MTMA. Instructors who intend to hold trainings in MTM-Logistics are granted a special teaching license by MTMA (see 5.2).

As a rule, the number of participants is restricted to 20. Exceptions require prior written consent by the management of MTMA.

### **Training materials**

The mandatory training materials consist of the manual MTM-Logistics (including the back-up analyses of the MTM-Logistics Standard Operations), the MTM-Logistics data cards, daily repetition exercises, and various forms, all published MTMA. Further teaching aids are the manual-related presentation, the software TiCon, and films, which are provided together with the related work system descriptions, in accordance with the syllabus.

### **Duration of training**

Training in MTM-Logistics takes 40 hours.

### **Examination**

Training in MTM-Logistics ends with a written examination. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

### **Certificate**

Having passed the MTM-Logistics exam the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.

### **MTM-Logistics (Standard Operations)**

Participants who have already completed training in "MTM-UAS" and intend to qualify also in "MTM-Logistics" may attend the training course "MTM-Logistics (Standard Operations)".



Training in MTM-Logistics (Standard Operations) is offered by MTMA on a regular basis.

To be admitted to the training in MTM-Logistics (Standard Operations) the applicant has to have passed the exam in another higher aggregated process building block system, MTM-UAS recommended. The training deals exclusively with the standard operations Logistics and ends with the MTM-Logistics exam. Training in MTM-Logistics Standard Operations takes 20 hours.

#### 4.1.8 MTM-MEK

##### Admission requirements

To be admitted to the training in MTM-MEK (MTM for one-of-a-kind and small variable batch production) the applicant has to have passed the MTM-1 Base exam.

##### Subject

The training in MTM-MEK imparts knowledge of the content and structures of the MTM-MEK process building block system, consisting of the MTM-MEK basic operations and the MTM-MEK standard operations, as well as the required skills to apply the system.

##### Contents

- The process building block system MTM-MEK and its development
- Principles of the development, as well as knowledge of the structure and content of the MTM-MEK Basic Operations and the MTM-MEK Standard Operations
- Rules for the consistent and correct use of the process building block system MTM-MEK
- Practical exercises to consolidate the gained knowledge

##### Learning objectives

The participant **knows**:

- the process building block system MTM-MEK and its development,
- the relevance of the method level in process type 3 and its influencing factors,
- the classification of MTM-MEK in the Framework of the MTM Process Building Block Systems,
- the application requirements for and application areas of MTM-MEK, and
- the principles underlying the development and description of the standard operations for process type 3.

The participant **is able to use** the process building block system MTM-MEK in practice, in particular to:

- structure, plan, and design processes and work systems,
- describe and evaluate work content,
- identify design potential for planning and improve processes and work systems, and
- create and describe company-specific process building blocks.

##### Procedure

Public as well as in-house trainings in MTM-MEK end with an examination composed by MTMA. They may be taught in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3) by a licensed MTM-Instructor only.

As a rule, the number of participants is restricted to 20. Exceptions require prior written consent by the management of MTMA.



### **Training materials**

The mandatory training materials consist of the MTM-MEK manual (including the back-up analyses of the MEK standard operations), the MTM-MEK data cards of both the basic operations and the standard operations, daily repetition exercises, and various forms, all published by MTMA. Further teaching aids are the manual-related presentation, the MTM training box and the software TiCon.

### **Duration of training**

The training in MTM-MEK takes 40 hours.

### **Examination**

The training in MTM-MEK ends with a written examination. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

### **Certificate**

Having passed the MTM-MEK exam the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.



#### 4.1.9 MTM-Practitioner

The training for MTM-Practitioner may take the form of a public or in-house training or coaching on the job (see 3.5).

##### **Admission requirements**

To be admitted to the training for MTM-Practitioner the applicant has to have passed the exams in MTM-1 Base and in one of the following trainings: MTM-1, MTM-HWD, MTM-2, MTM-SD, MTM-UAS, MTM-Logistics, MTM-MEK, EAWS, or in one of the acknowledged company process building block systems (see 4.2).

In addition, the applicant has to have gained practical experience in the application of the respective MTM process building block systems. Such practical experience may be gained by applying MTM in the company, by independently creating MTM analyses for the description and evaluation of work processes, by identifying analyzing errors or deviations in the individual operator methods from the defined work method, or by revealing improvement potentials.

##### **Subject**

The training for MTM-Practitioner provides the participant with the knowledge and practical skills that are required to apply MTM process building blocks for planning, designing, and optimizing business processes and work systems.

##### **Contents**

- Basics of the efficient and worker-oriented design of work systems
- Planning, designing, and assessing work systems in terms of productivity, ergonomics, and efficiency
- Comparing solution alternatives and identifying analyzing errors or deviations from (operational) reality, as well as revealing improvement potentials
- Selecting and using appropriate design elements by applying the MTM design catalogue and the guidelines for work design in case studies
- Providing the participants with the required analytical skills, based on selected case studies
- Solving a complex problem in either individual or group work, including the creation of a cost and profitability comparison, presenting the results, and sitting the final exam

### Learning objectives

The participant **knows**:

- the individual phases in PEP and the holistic design approach inherent in MTM,
- the essential methods and tools that may be applied in designing and optimizing the individual PEP phases, and
- the basics of work design.

The participant **is able to use** the MTM method in practice, in particular to:

- plan new work processes and work systems,
- improve existing work systems, and
- select and evaluate design solutions, based on ergonomic and economic criteria.

The participant

- carries through at least a target-performance analysis, based on the respective MTM process building block system, the scope of which should benefit the chosen task or the scope of analysis of the respective process building block system,
- recognizes analyzing errors in or deviations from (operational) reality and presents improvement potentials appropriately,
- develops, documents, and implements reasonable measures for work organization and work design for a specific practical problem, for example for the analyzed work system or product, by using the design checklist and the action sheet,
- creates a cost and profitability comparison appropriately and correctly, and
- documents and presents the results in a suitable form.
- 

### Procedure

The training for MTM-Practitioner may be taught in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3) by a licensed MTM-Instructor only. The instructor must be in possession of a teaching license in the respective process building block system. Instructors who intend to hold trainings for MTM-Practitioner are granted a special teaching license by MTMA (see 5.2).

As a rule, the number of participants is restricted to 16. Exceptions require prior written consent by the management of MTMA.

A customized training for MTM-Practitioner is principally possible and even desirable. The training must be based, however, on the general conditions as defined in the Qualification Procedures of MTMA. Prior to the start of an in-house training, MTMA has to agree to contents and syllabus. Should the training for MTM-Practitioner be held in-house or should coaching on the job be intended the instructor must be in possession of a valid teaching license for the respective process building block system.

**Training materials**

Training materials comprise the manuals of the MTM process building block systems (already possessed by the participants) and the MTM-Practitioner manual. Tasks (problems) and case studies are available for public trainings and group work. For in-house trainings for MTM-Practitioner and coaching on the job case studies have to be agreed with MTMA and prepared accordingly. Further teaching aids are the handout-related presentation, the MTM training box, various forms, and films, which are provided together with the related work system descriptions, in accordance with the syllabus, and the software TiCon.

**Duration of training**

The training for MTM-Practitioner takes 40 hours.

**Examination and scoring**

The training for MTM-Practitioner ends with the presentation of the project results and an examination. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

For the final presentation the project results are prepared and presented. In the case of in-house trainings and coaching on the job, the presentation with the project results is not transmitted to MTMA.

**Certificate**

Having passed the MTM-Practitioner exam the candidate receives a certificate. Should the participant have failed the exam in the training for MTM-Practitioner, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.



#### **4.1.10 "Blue Card" (MTM) – Finalization of the Qualification as MTM-Practitioner**

Having passed the exams

- in MTM-1 Base and one of the following trainings: MTM-1, MTM-HWD, MTM-SD, MTM-2, MTM-UAS, MTM-Logistics, MTM-MEK, or in one of the acknowledged company building block systems or  
and having
- gained application experience in the respective process building block system after having qualified for MTM-Practitioner, and
- successfully finalized the training for MTM-Practitioner

the candidate is awarded the "Blue Card", the international proof of the candidate's ability to use the MTM method in practice. We recommend acquiring the individual certificates within a maximum of three years.

The "Blue Card" (MTM) is proof of the bearer's ready-to-use knowledge of the MTM method and his ability to make use of this knowledge to design ideal work processes. The "Blue Card" (MTM) is proof of the candidate's practical skills in the correct application of the MTM method.

The "Blue Card" (MTM) lists all MTM process building block systems for which the bearer has obtained a certificate.

The "Blue Card" (MTM) is valid for three years. It can be renewed by attending a public MTM-Practitioner Refresher training, offered by MTMA, or an in-house training. The in-house training may be held by an instructor who possesses a valid teaching license.

#### 4.1.11 MTM-Practitioner Refresher

The MTM-Practitioner Refresher training is available exclusively for the following process building block systems: MTM-1, MTM-HWD, MTM-SD, MTM-2, MTM-UAS, MTM-Logistics, MTM-MEK, and the acknowledged company process building block systems. The MTM-Practitioner Refresher training focusses on the respective process building block system.

##### Admission requirements

To be admitted to the MTM-Practitioner Refresher training the applicant must be in possession of the "Blue Card" (MTM). In addition, the participant has to present, at the beginning of the training, mandatory analyses, created as specified by MTMA (see Appendix 1).

The "Blue Card" (MTM) may have expired no longer than 12 months. Otherwise, the Examination Board of MTMA will decide in the given case on the conditions for participation, including necessary repetition of parts of the training, e. g. a renewed participation in the training for MTM-Practitioner.

##### Subject

The MTM-Practitioner Refresher training ensures that the MTM-Practitioner, at a 3-year interval, updates his skills in and knowledge of the MTM application.

##### Contents

- Further developments in teaching and applying the MTM method
- Analyzing training with a focus on one MTM process building block system
- Sensitization for and avoidance of frequent application errors
- Information about new features and current developments in other MTM process building block systems

##### Learning objectives

The participant

- knows about further developments in teaching and applying the MTM method,
- knows about frequently occurring application errors and is intent on avoiding them, and
- has gained analyzing experience.

##### Procedure

MTM-Practitioner Refresher trainings may be taught in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3) by a licensed MTM-Instructor only. The instructor must be in possession of a teaching license in the respective process building block system. Instructors who intend to hold in-house MTM-Practitioner Refresher trainings or to do coaching on the job, are granted a special teaching license by MTMA (see 5.2). Prior to the start of an in-house training, MTMA has to agree to contents and syllabus.

As a rule, the number of participants is restricted to 20. Exceptions require prior written consent by the management of MTMA.



### **Training materials**

There are no particular training materials provided.

### **Duration of training**

The MTM-Practitioner Refresher training takes 20 hours.

The management of MTMA may reduce the duration, depending on the number of participants:

- 1 – 2 participants                      8 hours
- 3 – 5 participants                      16 hours
- > 5 participants                      20 hours

### **Examination**

The MTM-Practitioner Refresher training ends with an examination in the respective MTM process building block system. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

Having passed the exam in the MTM-Practitioner Refresher training the MTM-Practitioner will get his "Blue Card" (MTM) renewed for **all** process building block systems for which he possesses of a certificate.

### **Certificate**

Having passed the exam in the MTM-Practitioner Refresher training a certificate will be issued and the "Blue Card" (MTM) renewed. Should the participant have failed the exam, he will be informed by separate mail. Instead of the "Blue Card" (MTM) he will then receive a neutral confirmation of participation with no mention of the exam result.

## **4.2 Qualification as MTM-Practitioner Based on the Acknowledged Company Process Building Block Systems**

### **4.2.1 Introduction**

The qualification as MTM-Practitioner based on one of the acknowledged company process building block systems is subject to the same regulations that apply to the training for MTM-Practitioner (see 4.1). Acknowledged company process building block systems are company-specific planning time catalogues or systems with defined application requirements and rules (presented, for example, in a training manual). Their application is restricted to the respective company. Company process building block systems have been acknowledged by MTMA. Due to this acknowledgement, trainings in the company process building block systems are integrated into the Structure of Training of MTMA and are, thus, subject to the Qualification Procedures of MTMA. The company-specific process building block systems are on a higher hierarchic level than the MTM Basic System (MTM-1) and are based on one of the following MTM process building block systems: MTM-1, MTM-SD, MTM-2, MTM-UAS, or MTM-MEK.

To present, the company process building block systems of the Daimler MB Planned Time Values (C-Values) and the BMW Standard Data (BMW SD) have been acknowledged. The formal decision on the participation in training in these acknowledged company process building block systems is made by the respective company.

To be admitted to the training in a company process building block system, the applicant has to provide evidence (e. g. by means of a certificate) of his knowledge of the underlying MTM process building block system (at least of the motion sequences of the Standard Data Basic Values or the Basic Operations in MTM-UAS or MTM-MEK).

With respect to the training for MTM-Practitioner and MTM-Instructor, a certificate obtained in one of the acknowledged company process building block systems has the same value as a certificate obtained in any of the other MTM process building block systems listed above.

#### 4.2.2 C-Values

The Daimler MB Planned Time Values (C-Values) are based on the MTM Standard Data.

##### Admission requirements

To be admitted to the training in C-Values the applicant has to have passed the MTM-1 Base exam. Another minimum requirement to receive the certificate in C-Values is the participation in two-day training in MTM-SD (Basic Values). This training imparts necessary and profound knowledge of the process building block system MTM-SD, the basis for the C-Values.

##### Subject

Training in C-Values imparts knowledge of the content and structures of the process building block system of the C-Values and develops the skills required for its practical application.

##### Contents

- The C-Values and their development
- The principles underlying the development and structure of the C-Values
- Rules for the consistent and correct use of the C-Values
- Practical exercises to consolidate the gained knowledge

##### Learning objectives

The participant **knows**:

- the company process building block system of the Daimler MB Planned Time Values (C-Values) and their development,
- the classification of the MB Planned Time Values (C-Values) in the Framework of the MTM Process Building Block Systems,
- the principles underlying the development of the process building block system of the MB Planned Time Values (C-Values), and
- the application requirements for and application areas of the MB Planned Time Values (C-Values).

The participant **is able to** apply the MB Planned Time Values (C-Values) in practice, in particular to:

- structure, plan, and design processes and work systems,
- describe and evaluate work content,
- improve existing work systems, and
- create and describe company-specific process building blocks.

##### Procedure

Training in the C-Values ends with an examination composed by MTMA and approved of by Daimler AG. They may be taught in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3) by a licensed MTM-Instructor only.



As a rule, the number of participants is restricted to 20. Exceptions require prior written consent by the management of MTMA.

**Training materials**

The mandatory training materials consist of the MB Planned Time Values (C-Values) manual, the corresponding data cards and forms, all published by Daimler AG.

**Duration of training**

Training in the C-Values takes 40 hours.

**Examination**

Training in the C-Values ends with a written examination. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

**Certificate**

Having passed the C-Values exam the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.

**C-Values User**

To be authorized to apply the C-Values in the operational environment of Daimler AG the future user has to have passed the C-Values exam. This is verified by the card "C-Values User" and/ or the C-Values certificate. This is also proof of the user's ability to apply the C-Values for planning, evaluating, and designing processes.

To receive the card "C-Values User" the applicant has minimum to

- participate in the training MTM-1 Base,
- participate in the training MTM-SD (Basic Values) (without examination), and
- pass the C-Values examination.

If these minimum requirements are met, the card "C-Values User" will be issued.



### **4.2.3 BMW Group SD**

The development of the BMW Group Standard Data (BMW Group SD) was based on MTM-1 and MTM-UAS.

The process building block system BMW Group SD consists of:

- BMW Group SD Master Data
- BMW Group SD Multiple Purpose Data
- BMW Group SD Logistics

The respective trainings in BMW Group Standard Data and the integration of the BMW Group Standard Data in the structure of the qualification as MTM-Practitioner and MTM-Instructor, as specified by MTMA, have been defined in the company-specific BMW Group SD training concept. The formal decision on the participation in the training in BMW Group SD is made by the BMW Group. If you have any further questions in this respect, please contact MTMA.

### 4.3 Qualification as EAWS-Practitioner

The qualification as EAWS-Practitioner addresses all staff members in the company who have to create ergonomic analyses or make ergonomic assessments in their field of work: employees, professional and managerial staff, as well as representatives from the works council and various other interest groups. It also addresses ergonomic officers and staff members who create or assess ergonomic risk analyses in the company, or employees who design, optimize and/ or restructure workplaces in the industrial environment.

The qualification as EAWS-Practitioner starts with the training in EAWS. On the successful completion of the training in EAWS, the applicant has to acquire practical experience before he can start his training for EAWS-Practitioner (see Illustration 1).

On the successful completion of all required trainings the applicant will receive the "Blue Card" (EAWS), the internationally acknowledged qualification certificate for EAWS-Practitioners. The "Blue Card" is valid for three years.

### 4.3.1 EAWS

#### Admission requirements

There are no admission requirements.

We recommend basic knowledge of micro ergonomics (e. g. workplace design), macro ergonomics (e. g. work system design), and behavioral ergonomics (e. g. demands upon man to be able to perform; basic anthropometric aspects; mental aspects; factors concerning the work environment; work design in accordance with ergonomics).

#### Subject

The training imparts basic knowledge of load assessment with EAWS – for both existing and planned work systems. With EAWS efficient ergonomic risk assessment is possible, based on standardized rules.

#### Contents

- Selected basics of ergonomics
- EAWS structure, principles and assessment (paper and pencil method)
- Comprehensive assessment of the physical loads on the whole body and the upper limbs
- Integral design of the work system and the related processes, in combination with an ergonomic risk analysis
- Implementation of ergonomic requirements on the design process by proactive ergonomics
- Overview of EAWS degrees (“Blue Card” and “Green Card”) and their national and international significance

#### Learning objectives

The participant **knows**:

- the structure of the EAWS method,
- the areas of application and application prerequisites for EAWS,
- the importance of proactive ergonomics in product design and process planning,
- the correlation between ergonomic assessment and process shaping with the help of a process language (preferably MTM), and
- the legal basis for ergonomic assessment.

The participant **is able to**:

- create EAWS analyses independently and gains initial experience with the EAWS rules,
- evaluate how to use EAWS appropriately in his professional environment, and
- identify from which advanced training measures he will benefit most in his profession.

**Procedure**

Public as well as in-house trainings in EAWS end with an examination composed by MTMA. They may be taught in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3) by a licensed EAWS-Instructor only.

As a rule, the number of participants is restricted to 20. Exceptions require prior written consent by the management of MTMA.

**Training materials**

The mandatory training materials consist of the EAWS manual, EAWS forms, and daily repetition exercises, all published by MTMA. Further teaching aids are the manual-related presentation, the MTM training box and the software TiCon.

**Duration of training**

Training in EAWS takes 40 hours.

**Examination**

Training in EAWS ends with a written examination. As an exception, the Examination Board may order an additional oral examination. Scoring is done in accordance with par. 3.3.

**Certificate**

Having passed the EAWS exam the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.

### 4.3.2 EAWS-Practitioner

The training for EAWS-Practitioner may take the form of a public or in-house training or coaching on the job (see 3.5).

#### Admission requirements

To be admitted to the training for EAWS-Practitioner the applicant has to be in possession of the EAWS certificate; in addition, he has to have gained practical experience in the application of EAWS subsequent to his training in EAWS.

#### Subject

The training imparts knowledge and skills for the correct load assessment (load analysis) of work systems with EAWS.

#### Contents

- Planning, designing, and assessing work systems in terms of productivity, ergonomics, and efficiency
- Basics for the efficient and worker-oriented design of work systems
- EAWS structure, principles, assessment, and practical application
- Comparison of solution alternatives and identification of analyzing errors or deviations from (operational) reality, as well as revealing improvement potentials
- Exercises for the comprehensive assessment of the physical loads on the whole body and the upper limbs, based on EAWS
- Implementation of a holistic work system design
- Implementation of ergonomic requirements on the design process by proactive ergonomics
- Selected case studies for the training in risk identification, risk assessment and risk prognosis
- Solving a complex problem in either individual or group work, including the creation of a cost and profitability comparison in a suitable form, presenting the results, and sitting the final exam

### Learning objectives

The participant **knows**:

- the structure of the EAWS method,
- the areas of application and application prerequisites for EAWS,
- the importance of proactive ergonomics in product design and process planning,
- the correlation between ergonomic assessment and process shaping with the help of a process language (preferably MTM), and
- the legal basis for ergonomic assessment.

The participant **is able to**:

- create EAWS analyses independently and polishes his skills in confidently handling the EAWS rules,
- reliably apply the EAWS method to assess ergonomic risks – especially during the operational, product development and process planning phases – and suggested technical and organizational approaches, and
- make use of an EAWS-specific MTM software to support the numerous arithmetic operations required for the analysis of practical examples.

The participant

- carries through at least a target-performance analysis, based on the EAWS method,
- acquires a skill in assessing physical loads on the whole body and the upper limbs,
- recognizes assessment errors in or deviations from (operational) reality and presents improvement potentials appropriately,
- develops, documents, and implements reasonable measures for work organization or work design for a specific practical problem, for example for the analyzed work system or product,
- creates a cost and profitability comparison appropriately and correctly, and
- documents and presents the achieved results in a suitable form.

### Procedure

The training for EAWS-Practitioner may be taught in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3) by a licensed EAWS-Instructor only. The instructor must be in possession of a valid EAWS teaching license. Instructors who intend to hold trainings for EAWS-Practitioner are granted a special teaching license by MTMA (see 5.2).

As a rule, the number of participants is restricted to 16. Exceptions require prior written consent by the management of MTMA.

A customized training for EAWS-Practitioner is principally possible and even desirable. The training must be based, however, on the general conditions as defined in the Qualification Procedures of MTMA. Prior to the start of an in-house training, MTMA has to agree to contents and syllabus. Should the training for EAWS-Practitioner be held in-house, or should coaching on the job be intended, the company instructor must be in possession of a valid EAWS teaching license.

**Training materials**

The training materials comprise the EAWS and the EAWS-Practitioner manuals. Tasks (problems) and case studies are available for public trainings and group work. For in-house trainings for MTM-Practitioner and coaching on the job case studies have to be agreed with MTMA and prepared accordingly. Further teaching aids are a presentation, the MTM training box, various forms, and films, which are provided together with the related work system descriptions, in accordance with the syllabus, and the software TiCon.

**Duration of training**

Training for EAWS-Practitioner takes 40 hours.

**Examination and Score**

The training for EAWS-Practitioner ends with the presentation of the project results and an examination. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

The project results are compiled and shared with the other groups in a final presentation. In the case of in-house trainings and coaching on the job, the presentation with the project results is not transmitted to MTMA.

**Certificate**

Having passed the EAWS-Practitioner exam the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.



#### **4.3.3 “Blue Card” (EAWS) – Finalization of the Qualification as EAWS-Practitioner**

Having passed the EAWS exam and gained application experience, and having passed the EAWS-Practitioner exam the candidate is awarded the “Blue Card” (EAWS), the international proof of the candidate’s ability to use the EAWS method in practice. We recommend acquiring the individual certificates within a maximum of three years.

The “Blue Card” (EAWS) is proof of the bearer’s ready-to-use knowledge of the EAWS method and his ability to make use of this knowledge to assess ergonomic risks.

The “Blue Card” (EAWS) is proof of the candidate’s practical skills in the correct application of the EAWS method.

The “Blue Card” (EAWS) is valid for three years. It can be renewed by attending a public EAWS-Practitioner Refresher training, offered by MTMA, or an in-house training. The training may be held by an MTMA instructor or a company instructor who possesses a valid teaching license.

#### 4.3.4 EAWS-Practitioner Refresher

##### Admission requirements

To be admitted to the EAWS-Practitioner Refresher training the applicant must be in possession of the "Blue Card" (EAWS). In addition, the participant has to present, at the beginning of the training, mandatory analyses, created as specified by MTMA (see Appendix 3).

The "Blue Card" (EAWS) may have expired no longer than 12 months. Otherwise, the Examination Board of MTMA will decide in the given case on the conditions for participation, including necessary repetition of parts of the training, e. g. a renewed participation in the training for EAWS-Practitioner.

##### Subject

The EAWS-Practitioner Refresher training ensures that the EAWS-Practitioner has, at a 3-year interval, updated and trained his skills in and knowledge of the EAWS application.

##### Contents

- Further developments in teaching and applying the EAWS method
- Sensitization for and avoidance of frequent application errors
- Additional training in the application of EAWS
- Identification and evaluation of ergonomic influencing factors related to manual activities
- Calculation rules for the creation of ergonomic risk analyses
- Interpretation of the results of ergonomic risk analyses, in particular ergonomic bottlenecks
- Application of sections 0 (extra scores) to 4 (loads of the upper limbs)

##### Learning objectives

The participant

- knows about further developments in teaching and applying the EAWS method,
- knows about frequently occurring application errors and is intent on avoiding them, and
- has gained application experience with EAWS.

##### Procedure

The training EAWS-Practitioner Refresher may be taught in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3) by a licensed EAWS-Instructor only. The instructor must be in possession of a valid EAWS teaching license.

Instructors who intend to hold in-house EAWS-Practitioner Refresher trainings are granted a special teaching license by MTMA (see 5.2). In-house EAWS-Practitioner Refresher trainings require the instructor to be in possession of a valid EAWS teaching license.

As a rule, the number of participants is restricted to 20. Exceptions require prior written consent by the management of MTMA.

**Training materials**

There are no particular training materials provided.

**Duration of training**

The EAWS-Practitioner Refresher training takes 20 hours.

The management of MTMA may reduce the duration, depending on the number of participants:

- 1 – 2 participants                      8 hours
- 3 – 5 participants                      16 hours
- > 5 participants                      20 hours

**Examination**

The EAWS-Practitioner Refresher training ends with an examination. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

The candidate must pass this exam to have his “Blue Card” (EAWS) renewed for another three years.

**Certificate**

Having passed the exam in the EAWS-Practitioner Refresher training a certificate will be issued and the “Blue Card” (EAWS) renewed. Should the participant have failed the exam, he will be informed by separate mail. Instead of the “Blue Card” (EAWS) he will then receive a neutral confirmation of participation with no mention of the exam result.



## 5 Qualification as Instructor

The training as Instructor qualifies instructors for the dissemination of the MTM method, the Ergonomic Assessment tool EAWS, and ProKon. The instructor is an experienced practitioner who avails of the didactic skills to pass on his knowledge and, thus, contributes to the dissemination of the MTM and EAWS methods. The instructor is the contact person for all questions related to the application and implementation of these methods in the company.

The qualification as instructor is composed of a didactic and a technical part.

- The **didactic part** is taught in the trainings for MTM-Instructor and EAWS-Instructor.
- The **technical part** is taught in at least one license course and, if applicable, in additionally required further training courses.

### Note

Participants who have already qualified as either MTM-Instructor or EAWS-Instructor have to attend "only" the required license courses to qualify as the respective "other" instructor.

Having successfully completed the technical part and having been granted a teaching license (the "Green Card") the instructor is authorized to hold MTM and EAWS training courses.

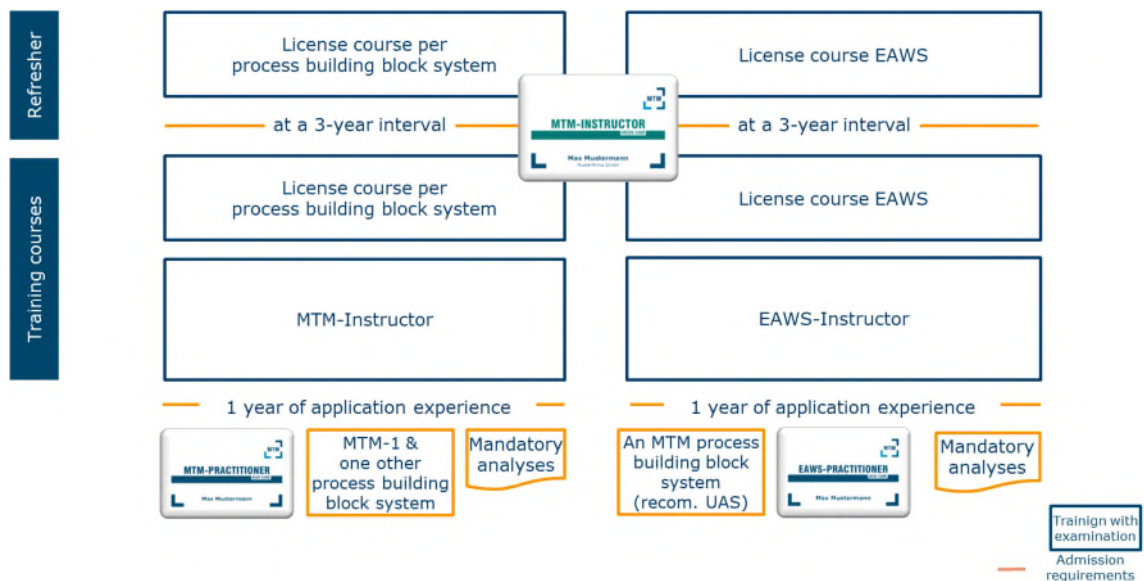


Illustration 2: Structure of the training for MTM-Instructor and EAWS-Instructor

The "Green Card" contains all valid teaching licenses for the MTM process building block systems, EAWS and the special teaching licenses.

## 5.1 Teaching License

Requirements for being granted a teaching license:

- Certificate obtained in the respective license course
- The company that employs the instructor is a member of MTMA

The "Green Card", which is valid for three years, is proof of the teaching license. It is an integral part of the employment relationship and authorizes the bearer to teach MTM or EAWS trainings at the member company of MTMA, or when being ordered to do so by MTMA.

The teaching license authorizes the bearer to teach, in accordance with the Qualification Procedures of MTMA, the process building block systems that his "Green Card" contains, or trainings in EAWS.

The teaching license will be renewed automatically, if, three years later, the candidate passes the exam in the license course for the respective process building block system and is still employed by a member company of MTMA.

The "Green Card" may have expired no longer than 12 months. Otherwise, the Examination Board of MTMA will decide in the given case on the conditions for participations, including necessary repetition of parts of the training.

## 5.2 Special License

For all trainings (both in-house and public) for which no license courses are available, the management of MTMA will grant a special license.

### 5.2.1 Instructor for MTM-Practitioner and MTM-Practitioner Refresher

A special teaching license for MTM-Practitioner and MTM-Practitioner Refresher trainings may be granted by the management of MTMA. To be admitted to the refresher training, the candidate has to be in possession of a valid teaching license for the required MTM process building block system and has to have attended the MTM-Practitioner license course. The MTM-Practitioner license course takes 8 hours and is part of the training for MTM-Practitioner. It requires on-site attendance. The MTM-Practitioner license course ends with an examination. The special teaching license for MTM-Practitioner is valid as long as the acquired individual teaching licenses are valid. In order to carry through an MTM-Practitioner or MTM-Practitioner Refresher training the instructor has to be in possession of a valid teaching license in the respective MTM process building block system.

### 5.2.2 Instructor for EAWS-Practitioner and EAWS-Practitioner Refresher

For the training for EAWS-Practitioner and EAWS Refresher the management of MTMA will grant a special license to EAWS-Instructors who are in possession of a valid teaching license. This special license is valid until revoked. To be granted this special license, the applicant is obliged to agree, prior to conducting the first training, the contents and didactic aspects with the management of MTMA. Sitting-in on classes in MTM- and EAWS-Practitioner is recommended.

### **5.2.3 ProKon-Instructor**

A special license for the training in ProKon may be granted by the management of MTMA solely to MTM-Instructors who are in possession of at least one valid teaching license, who have successfully completed the training in ProKon, and who have gained experience in the application of ProKon. This special license is valid until revoked.

### **5.2.4 Instructor for MTM-eHPV**

A special license for the training in MTM-eHPV Expert may be granted by the management of MTMA solely to MTM-Instructors who are in possession of at least one valid teaching license, who have successfully completed the training in MTM-eHPV Expert, and who have gained experience in the application of MTM-eHPV Expert. This special license is valid until revoked.

### **5.2.5 MTM-Logistics**

A special license for the trainings MTM-Logistics and MTM-Logistics (Standard Operations) may be granted by the management of MTMA solely to MTM-Instructors who are in possession of valid MTM-1 and MTM-UAS teaching licenses, who have successfully completed the training in MTM-Logistics, and who have gained experience in the application of the MTM-Logistics Standard Operations. This special license is valid until revoked.

### **5.2.6 One-MTM Master Instructor**

One-MTM Master Instructors are MTM- or EAWS-Instructors of a One-MTM Partner, a One-MTM Associate Partner, or a One-MTM Global Partner.

To ensure a worldwide uniform quality standard in teaching MTM, MTMA offers special training courses for the qualification as One-MTM Master Instructor. These courses are held in line with the rules specified in APO for license courses in the respective MTM process building block systems.

The One-MTM Master Instructor has to ensure that the uniform rules for teaching MTM, as defined in APO, are applied in her/ his organization.

## **5.3 Pioneer Instructor**

It is possible to apply for a Pioneer Teaching License ("Green Card" with the note "Pioneer License") for a newly developed system by an informal request to MTMA.

The basic requirement to be granted a Pioneer teaching license (for a new system) is that the applicant holds a valid teaching license. In addition, active participation in the development of the new system and successful completion of the training in the new system are required. The Pioneer License is valid three years or until the first license course comes about.



The intention of the Pioneer Teaching License is to train the first instructors for a new process building block system already during the development of this new system, and, thus, support its promotion. Also, the pioneer instructors are expected to work out a uniform training concept (standardization of examination questions, etc.). In other words, in this first license course the pioneer instructors (and exclusively they) establish this uniformity through their participation and, by this, gain a full teaching license for the new process building block system.

#### **5.4 Emeritus Instructor**

It is possible to apply for an Emeritus Teaching License by an informal request to MTMA. After examination of the request the management of MTMA may grant the status of "Emeritus Instructor".

The status of "Emeritus Instructor" will be granted on the basis of the criteria listed below:

- The applicant has to be retired and in possession of at least one valid teaching license, and wants to act, on his own accord, as an MTM-/EAWS-Instructor for MTMA or a One-MTM Network partner organization.
- In his active professional life, the instructor carried through MTM training courses for MTMA or another One-MTM network partner organization and/ or was ordered to do so by MTMA or another One-MTM network partner organization.

For the renewal of Emeritus Instructor teaching licenses, the same rules apply as for all other teaching licenses granted by MTMA.

Emeritus Instructors may act as instructors exclusively by order of MTMA or another One-MTM network partner organization.



## 5.5 MTM-Instructor

### 5.5.1 MTM-Instructor

#### Admission requirements

To be admitted to the training for MTM-Instructor the applicant has to have passed the exams in MTM-1 and in one of the following trainings: MTM-HWD, MTM-SD, MTM-2, MTM-UAS, MTM-MEK, EAWS, or in one of the acknowledged company process building block systems.

Moreover, participation in the training for MTM-Instructor requires

- a valid proof of qualification, i.e. the "Blue Card" (MTM) and
- at least one year of practical experience in the application of the MTM method after obtaining the "Blue Card".

In addition, the participant has to present, at the beginning of the training, mandatory analyses in MTM-1, created as specified by MTMA (see Appendix 2).

#### Subject

Based on the process building block system MTM-1 the training for MTM-Instructor imparts knowledge and skills required to obtain the MTM teaching license.

On the one hand, the training for MTM-Instructor consolidates the knowledge of MTM-1 as basic knowledge of the MTM method and promotes the skills to argument for an across-the-board application in productivity management. On the other hand, the future instructor gets familiar with the methodical-didactic basics required to impart the knowledge of MTM. He can then directly use this basic knowledge in a license course for instructors and experience its application in the actual teaching situation.

#### Contents

- Basic knowledge of MTM in productivity management
- Knowledge of the structure of the MTM training measures, of the currently valid training materials, and the valid Qualification Procedures
- Development and consolidation of didactic skills
- Training in using didactic techniques and tools (MTM training box, media, such as presentations, flip-charts, and films, as well as group and individual work, performance of a demonstration lesson)
- Organization and formal preparation, execution, and follow-up measures of public and in-house courses



### **Learning objectives**

The participant **knows**:

- the classification of MTM in productivity management and PEP,
- the structure of MTM trainings and the Framework of the MTM Process Building Block Systems,
- the Qualification Procedures,
- the main training materials and how to use them effectively,
- the types of teaching and learning, and how to prepare and conduct trainings in MTM accordingly,
- the various teaching media and how to use them appropriately, and
- that students may behave in different ways and how to handle relevant situations in class due to his experience.

The participant **is able to**:

- systematically plan, work out, and perform a teaching unit,
- develop learning objectives and check the students' learning progress, and
- explain the structure of MTM trainings and the Framework of the MTM Process Building Block Systems.

The participant

- realizes that a teaching unit can be systematically prepared, even has to, in order to be successful, and
- gains confidence through preparatory exercises and demonstration lessons.

### **Procedure**

MTMA offers the training for MTM-Instructor at least once a year. It may be taught in accordance with the Qualification Procedures of MTMA by a licensed MTM-Instructor only. In addition, the licensed MTM-Instructor has to

- have at least three years of practical experience in applying the MTM systems,
- be in possession of the teaching licenses for MTM-1, MTM-SD, MTM-2, MTM-UAS, MTM-MEK, ProKon and, where applicable, the acknowledged company process building block systems,
- avail of several years of experience in MTM trainings offered by MTMA, and
- be full-time employed by MTMA.

As a rule, the number of participants is restricted to eight. Exceptions require prior written consent by the management of MTMA.

### **Training materials**

The mandatory training materials consist of the MTM-Instructor manual, the MTM-1 manual, the related presentation, the MTM-1 data card (MTM Standard Times data card), daily repetition exercises, various forms, all published by MTMA, and the currently valid Qualification Procedures of MTMA. Further teaching aids are the MTM training box, the software TiCon, and films, all of which are provided together with the related work system descriptions, in accordance with the syllabus.

**Duration of training**

Training for MTM-Instructor takes 40 hours.

The management of MTMA may reduce the duration, depending on the number of participants:

- 1 – 2 participants                    24 hours
- 3 – 5 participants                    32 hours
- > 5 participants                    40 hours

**Examination**

The exam consists of a written and an oral part. Apart from MTM-1 analyses for the individual sections, the written part may include general questions on MTM in productivity management. The oral part consists of a demonstration lesson based on a previously written description of a teaching unit. In the demonstration lesson the future instructor gives proof of his technical and didactic skills. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

**Certificate**

Having passed the MTM-Instructor examination the candidate receives a certificate, issued by MTMA. It is proof that its bearer avails of the knowledge and skills required to teach the MTM method and, thus, fulfills the admission requirements for the MTM License Courses to be awarded the MTM teaching license.



### 5.5.2 License Courses for MTM-Instructors

To obtain or renew an Instructor Diploma for teaching MTM-1 (or MTM-1 Base), MTM-HWD, MTM-SD, MTM-2, MTM-UAS, MTM-MEK, as well as the acknowledged company process building block systems, the candidate must complete a process-building-block-specific license course for MTM-Instructors in the respective system. It is recommended that the MTM-Instructor, who already is in possession of a teaching license for one or more higher aggregated process building block systems, in addition acquires to the teaching license in MTM-1.

#### Admission requirements

The candidate either holds an MTM-Instructor certificate or is in possession of a valid "Green Card" that includes the teaching license for at least one process building block system. In addition, the participant has to present, at the beginning of the training, mandatory analyses in the corresponding process building block system, created as specified by MTMA (see Appendix 2). Alternatively, the candidate may furnish proof of having taught at least five trainings in the corresponding process building block system over the past three years.

The company that employs the instructor has to be a member of MTMA.

#### Special admission requirements

Participation in a license course in one of the acknowledged company process building block systems requires a valid teaching license for the underlying MTM process building block system.

An active MTM-Instructor is not required to have his "Blue Card" (MTM) renewed as MTM-Practitioner; his "Green Card" replaces it.

An MTM-Instructor, who no longer wishes to work as an instructor, but wants to remain an MTM-Practitioner, may attend an MTM-Practitioner Refresher training as long as his "Green Card" has not expired for more than three years ago.

#### Subject

The license courses for MTM-Instructors are meant to ensure that the MTM-Instructor, at a three-year interval, renews his teaching license and is informed about innovations and new features and developments.

#### Contents

- Knowledge of the classification of MTM in productivity management
- Information on further developments in teaching and applying the MTM method
- Refreshing the knowledge of MTM-1
- Familiarization with new or further developed training and teaching materials for the respective process building block system
- Demonstration lesson
- Refreshing the knowledge of the respective process building block system plus intensive training
- Information about organizational and international developments
- Standardized international principles

### Learning objectives

The participant

- deepens his knowledge of the classification of MTM in productivity management,
- gets information on further developments in teaching and applying the MTM method,
- renews his knowledge of MTM-1,
- gets familiar with new or further developed training and teaching materials for the respective process building block system,
- performs a demonstration lesson, and
- receives intensive training in the respective MTM process building block system.

### Procedure

At least once a year, MTMA offers a license course for instructors who have qualified in the process building block systems MTM-1, MTM-HWD, MTM-SD, MTM-2, MTM-UAS, MTM-MEK, and in the acknowledged company process building block systems. It may be taught in accordance with the Qualification Procedures of MTMA by a licensed MTM-Instructor only. The licensed MTM-Instructor has to

- have at least three years of practical experience in applying the MTM method,
- be in possession of the teaching licenses for the process building block systems MTM-1, MTM-SD, MTM-2, MTM-UAS, MTM-MEK, ProKon and, where applicable, the acknowledged company process building block systems,
- avail of several years of experience in MTM trainings offered by MTMA, and
- be full-time employed by MTMA.

As a rule, the number of participants is restricted to 12. Exceptions require prior written consent by the management of MTMA.

### Training materials

The mandatory training materials for the corresponding license course consist of the training manual, the related presentation, the data cards, daily repetition exercises, various forms, all published by MTMA, and the currently valid Qualification Procedures of MTMA. Further teaching aids are the MTM training box, the software TiCon, and films, all of which are provided together with the related work system descriptions, in accordance with the syllabus.

### Duration of training

The license course for MTM-Instructors takes 20 hours.

The management of MTMA may reduce the duration, depending on the number of participants:

- |                      |          |
|----------------------|----------|
| - 1 – 2 participants | 8 hours  |
| - 3 – 5 participants | 16 hours |
| - > 5 participants   | 20 hours |

### Examination

The respective training ends with a written examination. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.



**Certificate**

The candidate has to pass the exam to receive a certificate or to be awarded or to renew the teaching license ("Green Card") for three years. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.

A teaching license for MTM-HWD is granted exclusively to employees and partners of MTMA, as well as to employees of the consortium partners. Employees of authorized partners may be granted the MTM-HWD teaching license only upon approval by the HWD steering committee.

## 5.6 EAWS-Instructor

### 5.6.1 EAWS-Instructor

#### Admission requirements

Participation in the training for EAWS-Instructor requires

- valid "Blue Card" (EAWS) and a certificate in one MTM process building block system (recommended MTM-UAS),
- at least one year of practical experience in the application of the EAWS method after obtaining the "Blue Card" (EAWS), and
- the presentation of mandatory analyses created as specified by MTMA (see Appendix 3).

#### Subject

The training for EAWS-Instructor imparts knowledge and skills required to obtain the EAWS teaching license.

On the one hand, the training for EAWS-Instructor consolidates the knowledge of EAWS. On the other hand, the future instructor gets familiar with the methodical-didactic basics required to impart the knowledge of EAWS. He can then directly use this basic knowledge of an EAWS license course and experience its application in the actual teaching situation.

#### Contents

- MTM methods in productivity management
- Structures of the MTM training measures, the valid training materials, and the currently valid Qualification Procedures
- Development and consolidation of didactic skills
- Training in using didactic techniques and tools (MTM training box, media, such as presentations, flip-charts, and films, as well as group and individual work, performance of a demonstration lesson)
- Organization and formal preparation, execution, and follow-up measures of public and in-house courses
- Sensitization for frequently occurring application errors in the creation of EAWS analyses

#### Learning objectives

The participant **knows**:

- the structure of MTM trainings and the Framework of the MTM Process Building Block Systems,
- the Qualification Procedures,
- the main training materials and how to use them effectively,
- the types of teaching and learning, and how to prepare and conduct trainings in EAWS accordingly,
- about the various teaching media and how to use them appropriately, and
- that students may behave in different ways and how to handle relevant situations in class due to his experience.



The participant **is able to**:

- systematically plan, work out, and perform a teaching unit,
- develop learning objectives and check the students' learning progress, and
- explain the structure of MTM trainings and the Framework of the MTM Process Building Block Systems.

The participant

- realizes that a teaching unit can be systematically prepared, even has to, in order to be successful, and
- gains confidence by preparatory exercises and demonstration lessons.

### **Procedure**

MTMA offers the training for EAWS-Instructor at least once a year. It may be taught in accordance with the currently valid Qualification Procedures of MTMA by a licensed EAWS-Instructor only. The licensed EAWS-Instructor has to

- have at least three years of practical experience in applying the EAWS system,
- hold teaching licenses for MTM-SD, MTM-2, MTM-UAS, MTM-MEK, ProKon, EAWS and, where applicable, the acknowledged company process building block systems,
- avail of several years of experience in trainings offered by MTMA,
- be an MTM-Instructor with a valid "Green Card", and
- be full-time employed by MTMA.

As a rule, the number of participants is restricted to eight. Exceptions require prior written consent by the management of MTMA.

### **Training materials**

The mandatory training materials consist of the EAWS-Instructor manual, the EAWS manual, the related presentation, all published by MTMA, and the currently valid Qualification Procedures of MTMA. Further teaching aids are the MTM training box, the software TiCon, and films, all of which are provided together with the related work system descriptions, in accordance with the syllabus.

### **Duration of training**

Training for EAWS-Instructor takes 40 hours.

The management of MTMA may reduce the duration, depending on the number of participants:

- |                      |          |
|----------------------|----------|
| - 1 – 2 participants | 24 hours |
| - 3 – 5 participants | 32 hours |
| - > 5 participants   | 40 hours |



**Examination**

The exam consists of a written and an oral part. The oral part consists of a demonstration lesson based on a previously written description of a teaching unit. In the demonstration lesson the future instructor gives proof of his technical and didactic skills. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

**Certificate**

Having passed the EAWS-Instructor examination the candidate receives a certificate, issued by MTMA. It is proof that its bearer avails of the knowledge and skills required to teach the EAWS method and, thus, fulfills the admission requirements for the MTM License Courses to be awarded the MTM teaching license.

### 5.6.2 License Course EAWS

To be awarded or to renew the teaching license for the EAWS method, the candidate has to complete the License Course EAWS successfully.

#### Admission requirements

The candidate either holds an EAWS-Instructor certificate or is in possession of a valid "Green Card" (EAWS). In addition, the participant has to present, at the beginning of the license course, mandatory analyses, created as specified by MTMA (see Appendix 3). Alternatively, the candidate may furnish proof of having taught EAWS at least five times over the past three years.

The company, by which the instructor is employed, is a member of MTMA.

An active EAWS-Instructor is not required to have his "Blue Card" (EAWS) renewed; his "Green Card" replaces it.

An EAWS-Instructor, who no longer wishes to work as an instructor, but wants to remain an EAWS-Practitioner, may attend an EAWS-Practitioner Refresher training as long as his "Green Card" has not expired for more than three years ago.

#### Subject

EAWS license courses are meant to ensure that the EAWS-Instructor, at a three-year interval, renews his teaching license and is informed about innovations and new features and developments.

#### Contents

- Update of the knowledge of EAWS
- Information on further developments in teaching and applying the EAWS method
- Familiarization with new or further developed EAWS training and teaching materials
- Training in conducting an EAWS training (demonstration lesson)
- Refreshing the knowledge of the EAWS method and intensive training
- 

#### Learning objectives

The participant

- deepens his knowledge of the EAWS method,
- gets information on further developments in teaching and applying the EAWS method,
- is made familiar with newly or further developed training materials for EAWS,
- performs a demonstration lesson, and
- receives intensive training in EAWS.

**Procedure**

MTMA offers the License Course EAWS at least once a year. It may be taught in accordance with the currently valid Qualification Procedures of MTMA by a licensed EAWS-Instructor only. The licensed EAWS-Instructor has to

- have at least three years of practical experience in applying the EAWS system,
- be in possession of an EAWS teaching license and avail of several years of experience in teaching EAWS courses,
- be an MTM-Instructor with a valid "Green Card", and
- be full-time employed by MTMA.

As a rule, the number of participants is restricted to 12. Exceptions require prior written consent by the management of MTMA.

**Training materials**

The mandatory training materials consist of the EAWS manual, the related presentation, all published by MTMA, and the currently valid Qualification Procedures of MTMA. Further teaching aids are the MTM training box, the software TiCon, and films, all of which are provided together with the related work system descriptions, in accordance with the syllabus.

**Duration of training**

The license course for EAWS-Instructor takes 24 hours.

The management of MTMA may reduce the duration, depending on the number of participants:

- |                      |          |
|----------------------|----------|
| - 1 – 2 participants | 8 hours  |
| - 3 – 5 participants | 16 hours |
| - > 5 participants   | 24 hours |

**Examination**

The training ends with a written examination. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

**Certificate**

The candidate has to pass the exam to receive a certificate or to be awarded or to renew the EAWS teaching license ("Green Card") for three years. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.



## 6 Further Trainings

### 6.1 ProKon

The training in ProKon (Produktionsgerechte Konstruktion, German for Production-Oriented Design) addresses product designers, developers, planners, and IE staff who, due to their respective product-related tasks, have a significant influence on future production times and costs.

#### Admission requirements

There are no admission requirements.

To intensify the practical benefit, the participants are requested to bring products (samples) or design examples from their respective companies.

#### Subject

Participants in the training learn how to use ProKon during the development phase to evaluate the ease of assembly of design alternatives. Based on influencing factors it is possible to identify assembly interferences. The training imparts basic knowledge that is deepened by practical examples. Solution alternatives are developed for these examples and are then evaluated with respect to their ease of assembly.

#### Contents

- Structure of the ProKon analyzing form and explanation of its use
- Essential rules for the consistent and correct application of ProKon
- Simple practical exercises and practical examples to consolidate the gained knowledge

#### Learning objectives

The participant **knows**:

- the criteria for the design of easy-to-assemble products,
- the interferences that may occur during assembly owing to the product design; these interferences are classified with respect to manual or automated assembly.

The participant **is able to**:

- structure a product in such a way that a ProKon analysis can be created,
- use ProKon for the design of easy-to-assemble products,
- quantify, based on ProKon analyses, design variants for manual and/ or automated assemblies, and suggest target-oriented design solutions, and
- define project targets for the design of easy-to-assemble products.



**Procedure**

ProKon is taught in either public or in-house trainings by a licensed MTM-Instructor, in accordance with the currently valid Qualification Procedures of MTMA. Instructors who intend to hold ProKon trainings are granted a special teaching license by MTMA (see 5.2).

As a rule, the number of participants is restricted to 12. Exceptions require prior written consent by the management of MTMA.

**Training materials**

The mandatory training materials consist of the ProKon manual, a related presentation, and the ProKon Analysis Sheet, all published by MTMA. During the training the participant is given the possibility to use a test version of the software tool *ProKondigital* on his own laptop.

**Duration of training**

Training in ProKon takes 16 hours.

**Score**

Training in ProKon is team-oriented.

**Certificate**

Based on their active participation in the team the participants receive a certificate.

## 6.2 Process Architecture

Training in Process Architecture addresses professional and managerial staff from IE, planning, time management, and administration.

### Admission requirements

To be admitted to the training in Process Architecture the applicant has to have passed the exams in MTM-1 Base and in one of the following trainings: MTM-1, MTM-HWD, MTM-2, MTM-SD, MTM-UAS, MTM-MEK, EAWS, or in one of the acknowledged company process building block systems (see 4.2).

### Subject

The training imparts knowledge and skills required to use product-specific process building blocks correctly in practical work. At various hierarchic levels, not only product-neutral but also product-specific process building blocks are developed, which are then used, for example, for product calculations or the determination of staff demand. The resulting planning times data bases have a modular structure, are transparent, and easy to maintain and use. In the training, related case studies are dealt with, using appropriate software tools.

### Contents

- Objectives of and demands on a company-specific process building block system
- Definition of application levels with respect to data transfer to other systems
- Determination of the required number of process building blocks, based on the product structure
- Development of company-specific process building blocks
- Principles of process building block creation
- Identification of influencing factors, as well as reference values and reference quantities
- Coding scheme
- Creation of documents for process planning (e. g. time calculation sheets, data cards)

### Learning objectives

The participant **knows**:

- the importance of the application levels of different process building block systems
- the principles applied in the development of process building blocks, and
- the relevance of a coding structure.

The participant **is able to**:

- to create process building block structures as basis for company-specific process building block systems,
- develop process planning documents, and
- apply the coding structure.



**Procedure**

Public as well as in-house trainings are taught in accordance with the currently valid Qualification Procedures of MTMA by an MTM-Instructor who is full-time employed by MTMA. Instructors who intend to hold trainings in Process Architecture are granted a special teaching license by MTMA (see 5.2).

As a rule, the number of participants is restricted to 12. Exceptions require prior written consent by the management of MTMA.

**Training materials**

The mandatory training materials consist of the manual Process Architecture and the Guidelines for the Coding of MTM Process Building Blocks, both MTMA. Further support is provided by a presentation, forms, a product model, and films on case studies.

**Duration of training**

Training in Process Architecture takes 24 hours.

**Score**

Training in Process Architecture is team-oriented.

**Certificate**

Based on their active participation in the team the participants receive a certificate.



### 6.3 MTM-eHPV Expert

The training for MTM-eHPV Expert addresses product designers, developers, planners, and IE staff in automotive product design who are involved in vehicle disassembly to establish benchmarks.

#### Admission requirements

To be admitted to the training for MTM-eHPV Expert the applicant has to have passed the MTM-1 Base and MTM-UAS exams. Profound knowledge of the VDA guideline "Einheitliche eHPV-Bewertung in der Fahrzeugzerlegung - VDA 4812" (standardized eHPV evaluation in vehicle disassembly, published by VDA – Verband der Automobilindustrie, the German Association of the Automotive Industry) is recommended.

#### Subject

Following the VDA guideline 4812, the training imparts basic knowledge (e. g. terminology, rules) and develops the necessary practical skills required for an eHPV evaluation in vehicle disassembly.

#### Contents

- Structure and development of the MTM-eHPV process building blocks
- Rules for the consistent and correct use of the MTM-eHPV process building blocks
- Practical exercises to consolidate the gained knowledge
- Procedure in disassembling fully assembled products (vehicles)
- Application of the MTM-eHPV process building blocks to determine design-induced assembly efforts and costs

#### Learning objectives

The participant **knows**:

- the eHPV terminology in vehicle disassembly, as recommended by VDA, and
- the rules to be observed when creating eHPV evaluations.

The participant **is able to**:

- use the MTM-eHPV process building blocks on the eHPV data cards proficiently, and
- create eHPV evaluations himself, observing the eHPV rules.

#### Procedure

Public as well as in-house trainings are taught in accordance with the currently valid Qualification Procedures of MTMA by an instructor who is full-time employed by MTMA. Instructors who intend to hold trainings for MTM-eHPV-Expert are granted a special teaching license by MTMA (see 5.2).

As a rule, the number of participants is restricted to 16. Exceptions require prior written consent by the management of MTMA.



### **Training materials**

The mandatory training materials consist of the manual MTM-eHPV Expert, the MTM-eHPV Expert data card, the data card of the MTM-UAS basic operations, and various forms, all published by MTMA. Further teaching aids are the manual-related presentation, the MTM training box, the software TiCon, and films, which are provided together with the related work system descriptions, in accordance with the syllabus.

### **Duration of training**

The training in MTM-eHPV Expert takes 24 hours.

### **Examination**

Training in MTM-eHPV Expert ends with a written examination. As an exception, the Examination Board may order an additional oral examination. The examination conditions are defined in par. 3.3.

### **Certificate**

Having passed the MTM-eHPV Expert exam the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.

## 6.4 MTM and Value Stream

Training in MTM and Value Stream addresses professional and managerial staff from IE and logistics.

### Admission requirements

There are no admission requirements. However, basic knowledge in MTM – in particular in the process building block system MTM-UAS – is recommended, and the participant should be familiar with the application fields and methods in IE, such as Lean Management, Just in Time, and KANBAN.

### Subject

- Identification and avoidance of waste
- Application of the Value Stream method to improve assembly and logistics processes, and to design work systems, material information flow, and productivity based on a given standard performance
- Recognition of the importance of the method pair MTM and Value Stream

### Contents

- How are MTM and Value Stream defined?
- Which are the phases in a Value Stream project?
- How does the combination of MTM and Value Stream function?
- What are the similarities, what the differences?
- What are the synergy effects?
- How is a “lean company” characterized?

Practical use in the business game “Light Factory”

- Extended value stream analysis
- From push to pull principle (one-piece-flow, KANBAN)
- Synchronization with marginal cycle time losses, based on customer cycles
- Identification, quantification, and avoidance of waste
- Compliance with the zero-error principle
- Identification and quantification of improvement potential by using the MTM method
- Planning and designing ideal assembly and logistics processes
- Implementation of the target value stream

### Learning objectives

The participant **knows**:

- the mutual influence of overall value stream and partial value stream,
- how to assess production and logistics processes MTM-based,
- the advantages of an extended value stream analysis for the evaluation and disclosure of logistics indexes, and
- the basics of value stream analysis and value stream design.

The participant **is able to**:

- make use of the appropriate tools for value design,
- draw an extended value stream,
- create a value stream analysis, and
- make use of value stream and MTM analyses for process evaluation and process design.

### **Procedure**

Public as well as in-house trainings are taught in accordance with the currently valid Qualification Procedures of MTMA by either an instructor who is full-time employed by MTMA or a member of or a person authorized by the management of MTMA. Instructors who intend to hold trainings in MTM and Value Stream are granted a special teaching license by MTMA (see 5.2).

As a rule, the number of participants is restricted to 12. Due to the intended group work and the case studies, exceptions to this rule are not possible.

### **Training materials**

The mandatory training materials consist of the MTM and Value Stream manual, the Value Stream data card, the MTM-UAS manual (basic operations), and the data card of the MTM-UAS basic operations, all published by MTMA. Further teaching aids are the manual-related presentation, a complex case study, and the MTM Value Stream training box.

### **Duration of training**

Training in MTM and Value Stream takes 24 hours.

### **Examination**

Training in MTM and Value Stream ends with an examination consisting of a written exam and a final presentation by each work group. As an exception, the Examination Board may order an additional oral examination. Scoring is done in accordance with par. 3.3.

### **Certificate**

Having passed the exam in Ergonomic Assessment with MTM the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.

## 6.5 MTM Visual Inspection

Training in MTM Visual Inspection addresses persons who are involved in the planning, setting up, and time-related evaluation of visual inspection workplaces.

### Admission requirements

There are no admission requirements. However, previous participation in the training in MTM-1 Base is recommended.

### Subject

MTM Visual Inspection is a method to analyze industrial inspection jobs. In a visual inspection job the inspection field size, eye focus and eye shift, seeing, perceiving, deciding, etc. are observed. In developing the data, the latest ergonomic and medical findings were taken into consideration. Based on examples from practical work, the participant gets acquainted with the application rules.

### Contents

- Insight into the historical development of MTM Visual Inspection
- Basic knowledge of the functionality and performance of the human eye
- Information on the design of inspection conditions, the description of inspection tasks, the duration and frequency of inspection jobs, the creation of work instructions, and the use of optical tools or aids
- Rules for the consistent and correct use of the process building block system MTM Visual Inspection
- Simple practical exercises in the application of the process building block system MTM Visual Inspection

### Learning objectives

The participant **knows**:

- the basic aspects of the functionality and performance of the human eye and learns about visual perception,
- the structure of the process building block system MTM Visual Inspection and how to use it, and
- the main aspects relevant for the design of visual inspection jobs.

The participant **is able to**:

- describe visual inspection jobs,
- analyze visual inspection activities,
- create work instructions for visual inspection jobs, and instruct accordingly.



**Procedure**

Public as well as in-house trainings in MTM Visual Inspection are taught in accordance with the currently valid Qualification Procedures of MTMA by an instructor who is full-time employed by MTMA. Instructors who intend to hold trainings in MTM Visual Inspection are granted a special teaching license by MTMA (see 5.2).

As a rule, the number of participants is restricted to ten. Exceptions require prior written consent by the management of MTMA.

**Training materials**

The mandatory training materials consist of the manual MTM Visual Inspection and the MTM Visual Inspection data card, all published by MTMA. Further teaching aids are the manual-related presentation and special forms.

**Duration of training**

Training in MTM Visual Inspection takes 24 hours.

The management of MTMA may reduce the duration, depending on the number of participants:

- 1 – 5 participants                      16 hours
- > 5 participants                        24 hours

**Score**

Training MTM Visual Inspection is team-oriented.

**Certificate**

Based on their active participation in the team the participants receive a certificate.

## 6.6 Basics of Ergonomics

Training in Basics of Ergonomics addresses persons who are in charge of the design, optimization, and restructuring of workplaces or equipment in the industrial environment.

### Admission requirements

There are no admission requirements.

### Subject

The training imparts basic knowledge of micro ergonomics (e. g. workplace design), macro ergonomics (e. g. work system design), and behavioral ergonomics.

### Contents

Training in Basics of Ergonomics deals with the anthropometric basics relevant for workplace design and possible environmental influences on man. The causes for physical or mental loads on man are dealt with explicitly.

- Man and ergonomics
- Work environment – influencing factors affecting the human organism
- Work organization from an ergonomic point of view
- Introduction to ergonomic assessment methods
- Profitability analysis of ergonomic measures

### Learning objectives

The participant **knows**:

- the scope of ergonomics and its related areas,
- the influencing factors affecting man in the work environment,
- the intention of ergonomic design,
- the basic conditions for human work performance,
- the indexes of anthropometric work design,
- the demands on the man-machine interface,
- the essential factors concerning the work environment, and
- the aspects of work organization relevant to avoid ergonomic risks.

The participant **is able to**:

- detect ergonomic risks,
- differentiate between micro, macro, and behavioral ergonomics,
- systematically approach the design of workplaces, and
- appreciate the importance of holistic design.

### **Procedure**

Basics of Ergonomics are taught in accordance with the currently valid Qualification Procedures of MTMA by an instructor who is full-time employed by MTMA. Instructors who intend to teach Basics of Ergonomics are granted a special teaching license by MTMA (see 5.2).

As a rule, the number of participants is restricted to 20. Exceptions require prior written consent by the management of MTMA.

### **Training materials**

The use of the manual Basics of Ergonomics, published by MTMA, is mandatory. Further teaching aids are the manual-related presentation and special exercises in measuring the ergonomic influencing factors in the various sections.

### **Duration of training**

Training in Basics of Ergonomics takes 24 hours.

### **Examination**

Training in Basics of Ergonomics ends with a written examination. As an exception, the Examination Board may order an additional oral examination. Scoring is done in accordance with par. 3.3.

### **Certificate**

Having passed the exam in Ergonomic Assessment with MTM the candidate receives a certificate. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.



## 6.7 University Training: Basic MTM

### Admission requirements

Participation in the course Basic MTM is based on the candidate being an active student at a university or a university of applied sciences (matriculation certificate). Applicants who have completed the training for state-certified technician (either full-time in at least two years or work-based in at least four years) will also be admitted.

### Subject

The training Basic MTM consists of the trainings in MTM-1 and MTM-UAS.

### Contents

- Historical development of MTM
- Overview of the Framework of MTM Process Building Block Systems
- MTM Basic Motions, limitations and influencing factors
- Rules for the consistent and correct use of the MTM Basic System
- Creation of analyses with the process building blocks of the MTM Basic System for ideal design
- The process building block system MTM-UAS and its development
- Principles of the development, structure, and content of the MTM-UAS basic operations
- Rules for the consistent and correct use of the process building block system MTM-UAS
- Practical exercises to consolidate the gained knowledge

### Learning objectives

The participant **knows**:

- the process building block systems MTM-1 and MTM-UAS and their development,
- the classification of MTM-1 and MTM-UAS in the Framework of the MTM Process Building Block Systems,
- the areas of application and application prerequisites for MTM-1 and MTM-UAS, and
- the MTM basic motions and their fundamental significance for higher aggregated MTM process building block systems.

The participant **is able to**:

- create MTM-1 and MTM-UAS analyses independently and masters the MTM-1 and MTM-UAS rules,
- use MTM-1 and MTM-UAS correctly in practice, in particular to
  - plan and design work methods, work processes, and workplaces,
  - shaping work contents (i.e. describe and assess them), and
  - improve existing work systems; and
- explain the MTM basic motions and their fundamental significance for higher aggregated MTM process building block systems.

**Procedure**

Training in Basic MTM ends with the examinations in MTM-1 and MTM-UAS, composed by MTMA. It is carried through by a licensed MTM-Instructor in accordance with the currently valid Qualification Procedures of MTMA (par. 3.3).

The instructor is either from MTMA, or is a member of the respective university or university of applied sciences.

As a rule, the minimum number of participants is 20. Exceptions require prior written consent by the management of MTMA.

**Training materials**

The mandatory training materials consist of the Basic MTM manual, the MTM-1 data card (MTM Standard Times data card), the data cards of the MTM-UAS Basic Operations, the data cards of the MTM-UAS Standard Operations, daily repetition exercises, and various forms, all published by MTMA. Further teaching aids are the Instructor Guidelines for MTM-1 and MTM-UAS, the manual-related presentation, the MTM training box, the software TiCon, and films, which are provided together with the related works system descriptions, in accordance with the syllabus.

**Duration of training**

Training in Basic MTM takes 100 hours.

**Examination**

The exams are held pursuant to par. 4.1.2 for the training in MTM-1 and par. 4.1.6 for the training in MTM-UAS.

**Certificate**

Having passed the exams, the candidate receives the certificates in MTM-1 and MTM-UAS. Should the participant have failed the exam, he will be informed by separate mail. Instead of the certificate he will then receive a neutral confirmation of participation with no mention of the exam result.

## **7 Fees**

All fees have been set and listed by the Board of MTMA. For the list of fees, please refer to <https://www.dmtm.com/> select Info/Downloads.

### **7.1 Examination and Cancellation Fees**

The examination fees are included in the training fees for public and in the package prices for in-house trainings.

For cancellation conditions please see our GTC: <https://www.mtm.org/agb>.

### **7.2 Fees for Special Examinations**

Candidates who did not acquire their knowledge in MTM trainings are also admitted to examinations. These examinations are subject to fees. Please refer to the valid List of Fees of MTMA. The same fees are charged for re-examinations.

### **7.3 "Sitting-in" Fees**

For sitting-ins on in-house training measures that are taught by an instructor of MTMA the candidate will be charged with the package price for the respective training.

### **7.4 VAT**

Pursuant to § 4 no. 22 UstG. (German Value Added Tax Act) training and examination fees are VAT-free.



## **8 Taking Effect**

These Qualification Procedures were agreed by the management of MTMA, following the decision made by the Examination Board. They take effect on June 1, 2020.

MTM ASSOCIATION e. V.

Knuth Jasker  
Managing Director

Prof. Dr. Peter Kuhlant  
Chairman of the Examination Board



## 9 Appendices

- Appendix 1 Notes on the creation of mandatory analyses for the training  
MTM-Practitioner Refresher
  
- Appendix 2 Notes on the creation of mandatory analyses for the training for  
MTM-Instructor or for the license courses for MTM-Instructors
  
- Appendix 3 Notes on the creation of mandatory analyses for trainings in EAWS





# Appendix 1

Notes on the Creation of Mandatory  
Analyses for the training  
MTM-Practitioner Refresher



## **Notes on the Creation of Mandatory Analyses for the MTM-Practitioner Refresher Training**

According to the Qualification Procedures of MTMA **mandatory analyses in the respective process building block system** have to be presented in preparation for the **MTM-Practitioner Refresher** training.

Using the process building block system applied by his company, the candidate has to create the **mandatory** (planning or production) **analyses** on freely selectable processes, preferably from his company. In addition, a presentation is to be prepared, which has to contain **information on the work system** (photos or sketches) and the general conditions or influencing factors. The analyses may be handed in either pencil-written (using forms 002, 003, 005) or as printouts from various software applications. Irrespective of the form, they **MUST** provide a clear process structure.

The mandatory analyses should represent completed activities (from company-specific examples / shopfloor examples). Herewith the analyses should include a broad variety of process building blocks of the respective system.

Length of analyses:

- MTM-1, MTM-HWD, MTM-SD, MTM-2: 300-2000 TMU
- MTM-UAS > 3000 TMU
- MTM-MEK > 7000 TMU

The **mandatory analyses** (paper or digital) have to be handed over to the instructor for inspection **at the beginning** of the training. The instructor decides which analyses will be presented and discussed in the course. For this reason, it is recommended that the participants bring with them their mandatory analyses and information on the work system also in digital form. At the end of the training they will get back all the material they handed over at the beginning.

The mandatory analyses presented in the MTM-Practitioner Refresher training are the prerequisite to be awarded the "Blue Card" (MTM).

In the MTM-Practitioner Refresher training the mandatory analyses are used to repeat the rules.



# Appendix 2

Notes on the creation of mandatory  
analyses for the training for  
MTM-Instructor or for  
the license courses for MTM-Instructors



## Notes on the creation of mandatory analyses for the trainings in EAWS

### **EAWS-Practitioner Refresher**

### **EAWS-Instructor**

### **License Course EAWS**

According to the Qualification Procedures mandatory analyses have to be presented in preparation for the

- **EAWS-Practitioner Refresher** training to **renew** the “Blue Card” (EAWS),
- the training for **EAWS-Instructor**, and
- the **license course EAWS** to be **awarded** or to **renew** the teaching license for the assessment tool EAWS.

Why mandatory analyses?

- To check, by discussing the mandatory analyses, the competence in practical application, and the adherence to the EAWS rules
- As preparation for the content of the **EAWS-Practitioner Refresher** training (the assessment tool EAWS)
- As preparation for the demonstration lesson required in the training for **EAWS-Instructor** and the **license course EAWS**

The candidate has to create the **mandatory analyses** (planning or production) on freely selectable processes, preferably from his company. In addition, a presentation is to be prepared, which to contain **information on the work system** and the general conditions or influencing factors.

1. Work system description (film, photo, or sketch)
2. The process, including the determination of times, has to be described appropriately by
  - a. An MTM analysis created with one of the process building block systems MTM-1, MTM-SD, MTM-2, MTM-HWD, MTM-UAS, or MTM-MEK, or
  - b. another description or time data determination method.

This includes the creation of a process structure and the description of the individual process steps. For this, MTM forms (002, 003, 005) or computer prints from various software applications may be used.

3. The required time for and the contents of the **analyzed process or process steps** has to be chosen in such a way that the assessment is comprehensible and meaningful.
4. The result of the assessment has to be presented in the form of a paper print of the filled-in EAWS form. It must include a **comprehensible description of the calculation (auxiliary calculations, using the data acquisition form, if necessary)**, so that the correct application and adherence to the EAWS rules in the 4 sections may be checked. An additional calculation with the company-specific software or a software product of the German MTM Association (e. g. *EAWSDigital*) would be appreciated.

The **mandatory analyses** (paper or digital) have to be handed over to the instructor for inspection **at the beginning** of the training. The instructor decides which analyses will be presented and discussed in class. For this reason, it is recommended that the participants bring their mandatory analyses and information on the work system also in digital form to the seminar. At the end of the training, they will get back all the material they handed over at the beginning.





# Appendix 3

Notes on the creation of mandatory  
analyses for trainings in EAWS



## Notes on the Creation of Mandatory Analyses for the Training for MTM-Instructor and for the License Courses for MTM-Instructors

Since 2011 the

- accomplishment of the training for **MTM-Instructor** and
- the **license courses for MTM-Instructors** has been required to **earn** or **renew** the teaching license in the corresponding process building block system ("Green Card").

The candidate can apply for a teaching license in the process building block systems

- MTM-1
- MTM-SD
- MTM-2
- MTM-HWD
- MTM-UAS
- MTM-MEK
- Company process building block systems acknowledged by MTMA (e. g. C-Values, BMW Group SD)

According to the Qualification Procedures of MTMA **mandatory analyses in MTM-1** have to be created and handed in in preparation for the **training for MTM-Instructor** and the corresponding process building block system in preparation for the **license courses for MTM-Instructor** (MTM-1, MTM-SD, MTM-2, MTM-HWD, MTM-UAS, and MTM-MEK). MTM-Instructors who have conducted at least 5 trainings in the corresponding process building block system over the past 3 years are not required to create and hand in mandatory analyses.

Using the corresponding process building block system, the candidate has to create the **mandatory** (planning or production) **analyses** on freely selectable processes, preferably from his company. In addition, a presentation is to be prepared. It has to contain **information on the work system** (photos or sketches) and the general conditions or influencing factors. The analyses may be handed in either pencil-written (using forms 002, 003, 005) or as printouts from various software applications. Irrespective of the form, they **MUST** provide a clear process structure. The same work process may be analyzed (as a whole or in part) with various process building block systems, if the process type appropriate for the corresponding process building block system or the respective method level is not given in the candidate's company.

As to the **scope of the analyses** MTMA has set **minimum TMUs** for the work process to be analyzed, depending on the applied process building block system:

MTM-1	800 TMU
MTM-SD	1 000 TMU
MTM-2	2 500 TMU
MTM-UAS	3 500 TMU
MTM-MEK	20 000 TMU

The **mandatory analyses** (paper or digital) have to be handed over to the instructor for inspection **at the beginning** of the training. The instructor decides which analyses will be presented and discussed in class. For this reason, it is recommended that the participants bring their mandatory analyses and information on the work system also in digital form to the seminar. At the end of the training, they will get back all the material they handed over at the beginning.

The evaluation of the mandatory analyses is part of the result of the examination for **MTM-Instructor**.

In the **License Courses for MTM-Instructors** the mandatory analyses are used to repeat the rules.