Quality Guideline

Training & Certification Program

Six Sigma Master Black Belt
Certification

European
Six Sigma Club Deutschland e.V.
www.sixsigmaclub.de

Version: 1.1

Status: 23/09/2021

Contents

Foreword 3
Background 3
Changes 4
Previous editions 4
1 Graphical summary of the minimum requirements 4
2 General information 5
3 Requirements for the Master Black Belt training program 5
4 Application for certification 6
5 Preparation for certification 6
6 Carrying out the certification (examination) 8
6.1 Repetition of the certification (examination) 8
6.2 Assessment according to development plan 9
6.2.1 Assessment of the Black Belt Tools 10
6.2.2 Assessment of the Advanced Tools 11
6.2.3 Evaluation of training courses and training modules carried out 12
6.2.4 Evaluation of training surveys (participants) 13

Foreword

Background

The Master Black Belt (MBB) is the highest level of training in the Six Sigma program. The tasks that can be performed by an MBB are varied and extensive.

He or she can be used as a coordinator and coach for Six Sigma activities (champion) or to lead extensive and complex projects.

Other tasks may include training employees to become Green Belts, Black Belts or in the area of Design for Six Sigma (DFSS).

In addition to all organisational and training activities, the further development of the Six Sigma methodology is an additional task of a Master Black Belt.

These extensive and responsible activities of an MBB require a solid and equally demanding training.

With this Quality Guideline, the European Six Sigma Club Deutschland e.V. creates the basis for training at a high level.

This guideline is binding for all companies that refer to Six Sigma Master Black Belt training in their tenders, training courses and/or certifications in accordance with the ESSC-D statutes.

This guideline was developed between 2007 and 2009. It was based on the discussions, workshops and presentations at the European conferences in Madrid in 2003 and Lisbon in 2004.

Many experienced Master Black Belts who were and are active in the various roles described above have contributed their knowledge to the guideline. The main stages in the development of this guideline were

- ESSC-D conference in Heltersberg - March 2007
- Workshop at the ESSC-D conference in Bielefeld - March 2008
- ESSC-D retreat - June 2008
- Discussion and feedback in the ESSC-D WIKI - August 2008 - June 2009
- Release at the ESSC-D retreat - June 2009

On behalf of the European Six Sigma Club Deutschland e.V., we would like to thank all those who have contributed to the development of this Quality Guideline for the training of Six Sigma Master Black Belts.

The Board of Directors

Changes

The following changes have been made to the version dated 28th August 2012:

a) Adaptation of the document layout to the new design
b) Addition of data mining advanced course (recommended additional training).

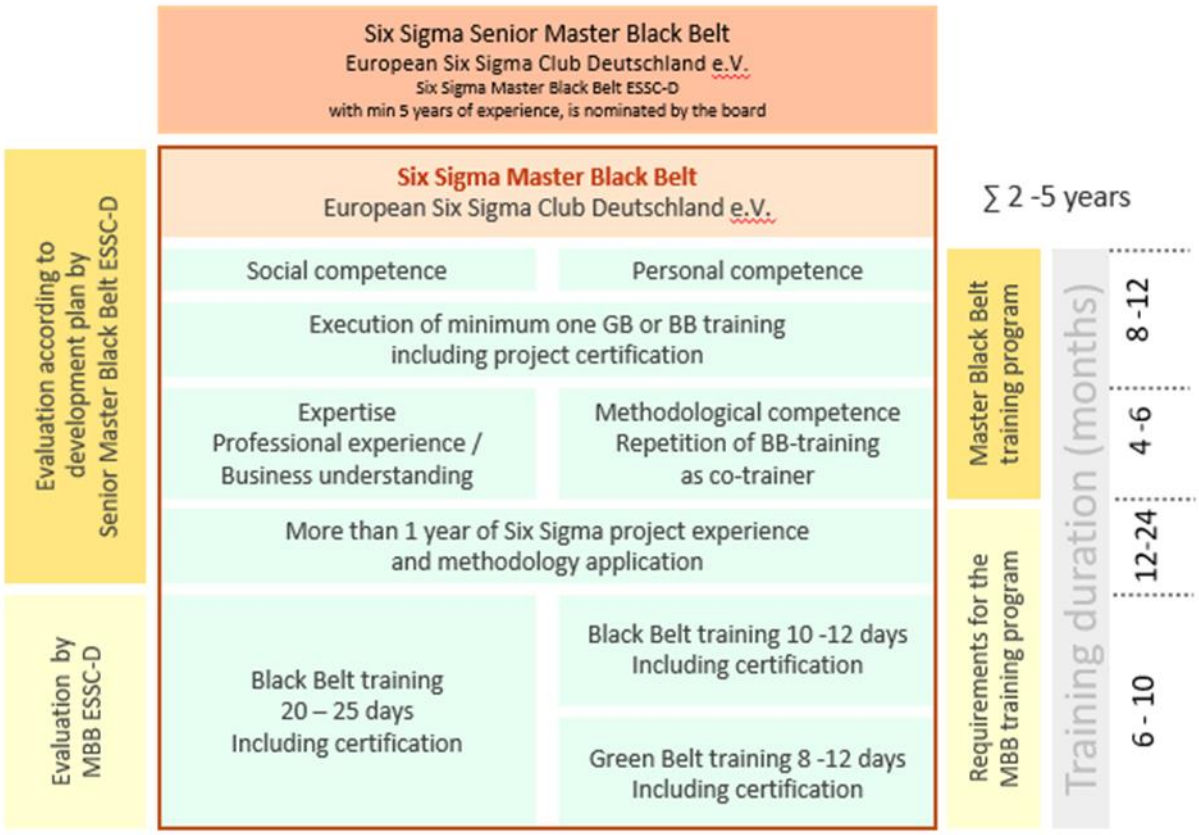
Previous editions

Version dated 28/08/2012

Version dated 15/08/2011

Version dated 15/11/2009.

1 Graphical summary of the minimum requirements



2 General information

The Master Black Belt training is supervised by a "Six Sigma Master Black Belt ESSC-D", the certification is carried out by a "Six Sigma Senior Master Black Belt ESSC-D". A Senior Master Black Belt ESSC-D performs the Master Black Belt function for a minimum of 5 years and has successfully supervised more than 10 Black Belts up to certification and is appointed by the ESSC-D Board.

The supervising Master Black Belt is responsible for the creation and evaluation of the individual Master Black Belt development plan. This consists of the following points, which must be planned and assessed by him:

- Prerequisites for Master Black Belt training
- Methodological competence
- Expertise, professional experience, business understanding
- Personal and social skills
- Assessment and certification

Certification is based on the ESSC-D assessment table for the certification of a Master Black Belt.

3 Requirements for the Master Black Belt training program

The training (development phase) of the prospective Master Black Belt has been carried out in accordance with the guideline described above (Quality Guideline "Minimum requirements for Six Sigma Master Black Belt training") and confirmed by a Six Sigma Senior Master Black Belt of the European Six Sigma Club Deutschland e.V..

The Six Sigma Black Belt certification has been notarised and is available.

The Master Black Belt candidate has led a Green Belt or Black Belt training course and supervised at least five of its participants up to certification in accordance with the ESSC-D guidelines (Quality Guideline).

In addition to this mentoring role, the candidate has also carried out Six Sigma projects with complex or innovative applications (related to the field of activity).

The results of this work are presented by the candidate to a panel of 3 ESSC-D Senior Master Black Belts. This panel proofs and evaluates the activities and applications of the Master Black Belt candidate.

The ESSC-D is aware that equivalent knowledge can also be acquired outside the ESSC-D. Certification is also possible in such cases. It is advisable to involve an ESSC-D Senior MBB as early as possible.

Certification as a "Six Sigma Master Black Belt ESSC-D" can only be carried out by an examination board of the European Six Sigma Club Deutschland e.V.

4 Application for certification

After completion of the development phase, the Master Black Belt candidate, together with the supervising Senior Master Black Belt, submits a written application for certification as a "Six Sigma Master Black Belt ESSC-D" to the board of the European Six Sigma Club Deutschland e.V..

Examination dates (duration approx. 3 hours) are set at the beginning of the quarter, so applications for certification must be submitted to the ESSC-D Board before the end of the quarter.

The application is assessed by the board and the result is sent in writing to the applicant and his supervisor.

5 Preparation for certification

The Board of the ESSC-D

appoints an examination panel consisting of 2-3 Six Sigma Senior Master Black Belts ESSC-D. At the same time, one of the three examiners is appointed as the examination supervisor. The examination supervisor is responsible for conducting and documenting the examination.

The Master Black Belt candidate

(supported by the supervising Senior Master Black Belt)

prepares the following documents and makes them available to the examination board for review 4 weeks before the examination:

List of

- Tool applications according to the ESSC-D Master Black Belt development plan
- Six Sigma projects carried out as project manager
- Coaching activities with management and project managers
- Certifications carried out by him as an expert Six Sigma Master Black Belt
- Activities as a trainer
- Further development of tools and/or tool modules

Only for Master Black Belt candidates in employment:

- Job description
- Statement from the employer about the Six Sigma activities carried out

Organisation of

- Date and location
- Room
- Participants (in addition to the Master Black Belt candidate and examination panel, the supervising Senior Master Black Belt and company representatives are also welcome to attend).

6 Executing the certification (examination)

Procedure	**Duration [min]** Approx.
• The Master Black Belt candidate presents his Six Sigma activities to the examination panel	60-75
• Das examination panel analyses the candidate's Six Sigma activities and application	60

• Assessment of the candidate's competence by the examination panel, divided into
  • preparation
  • presentation
  • technical ability
	45

Announcement of the examination result, with reasons, by the examiner	15

6.1 Repetition of the certification (examination)

If the activities of the Master Black Belt candidate or the examination results are deemed insufficient by the examination board, certification will be refused.

A new examination date can be requested within 12 months.

If the activities of the Master Black Belt candidate or the result of the examination are insufficient in the opinion of the examination board in individual points, a follow-up improvement can be agreed. This must be submitted to the examination board in writing within six months.

The examination board will decide whether a new on-site appointment is necessary.

6.2 Assessment according to development plan

(By Senior Master Black Belt ESSC-D)

The assessment by the Senior MBB documents the tool application of the MBB candidates. The following competence areas are assessed:

- Professional (development plan, project work),
- Personal (development plan, project work and coaching, co-trainer),
- Social and (development plan, project work and coaching, co-trainer),
- Methodological (development plan, project work and coaching, co-trainer, tool application).

6.2.1 Assessment of the Black Belt Tools

BB Six Sigma Tools	Tool understanding (1-4 see legend)	Training experience GB-YB (0-2)	BB Tool application (0-4)
Six Sigma concept			
Project strategy			
QFD			
Process sequence plans			
Cause & Effect			
FMEA			
Graphical visualization and analysis			
Descriptive statistics			
Process capability			
Measurement system analysis			
Hypothesist testing			
Analysis of variance (simple)			
T-Test			
Chi Square / Proportion test			
Simple linear regression			
Confidence intervals			
Sample size strategy			
Experimental design strategy			
Full-factorial DOE			
Center points / Block factors			
Fractional factorial DOE			
Co-variables			
Response Surface Methodology			
Multi-vari analysis			
Multiple regression			
Tolerance chains analysis			
Monte Carlo			
Control strategy			
SPC			
Others			
Sum of competencies	0	0	0
Min 216 of 290 (75%)	min 3	min 25*2	min 23*3

6.2.2 Assessment of the Advanced Tools

Master Black Belt Candidate Competence Evaluation (Advanced Tools)					
MBB Six Sigma Tools	**In development plan? Y/N**	**Tool understanding (1-4)**	**Training experience BB-GB (0-2)**	**Tool application (0-4)**	**Total expertise (1-10)**
Analysis Tools					
Multiple regression					
General Linear Models					
Data distributions					
Statistical tolerance analysis					
Data transformation					
Auto- & Cross-correlation					
Test for medians					
Advanced DOE					
Experimental design strategy					
Response Surface Methodology					
Taguchi/Robust Design & Noise					
Constrained random order					
Variance components					
DOE models and diagnosis					
Experiments with Covariables					
Incomplete DOE (evaluation)					
Lean Manufactoring					
Chemical processes					
Multi-vari data analysis					
Multivariate Data Process Control					
iGrafx or other simulation methodologies					
Mixture- and RSM designs					
Development area					
Tolerances					
Reliability					
Scorecard / Sigma calculation					
Simulations					
Quality Function Deployment					
Administration area					
Measurement systems					
Logistic regression					
iGrafx or other simulation methodologies					
Transformations					
Sales area					
Quantitative surveys					
Multi-vari data analysis					
Segmentation, Cluster analysis					
Conjoint analysis					
Production					
Examples of application					
Total competencies					

6.2.3 Evaluation of executed training courses and training modules

	MBB Candidate
	Date of examination
	Location
	Evaluator (Senior MBB)

	Contents	Preparation	Presentation	Technical ability	Score
1					0
2					0
3					0
4					0
5					0
6					0
7					0
8					0
9					0
10					0

		Does not meet expectations	Below expecations	Meets expectations	Partly exceeds expectations	Significantly above expecations
	Scoring	1	3	5	7	9

6.2.4 Evaluation of training surveys (participants)

(Feedback from training participants)

The Senior MBB evaluates the training survey results of the MBB candidates.

Six Sigma Training Evaluation Form	
Course:	
Trainer:	
Date:	
Location:	

Scoring: 1= very poor; 10=Excellent **Score**

1. Organisation and structure	**1 to 10**
The timing of the course announcement was satisfactory	
The course content was presented in a logical sequence	
I expect to achieve the project goals in the planned time frame.	
The course content is linked to business objectives and day-to-day work	
2. Trainer	
Technical knowledge	
Presentation skills	
Trainers ensure that the course content is easy to understand	
Questions are answered satisfactorily	
The trainers act as mentors	
3. Participants	
I am able to understand the course content	
The number of participants was appropriate for the course	
After the course, I will know when to use which tool	
4. Course environment	
Training room	
Quality of meals	
Hotel room	
5. Course material and content	
Quality of training documentation	
The modules are presented in a comprehensible way	
Legibility of the content on the screen	
The examples are comprehensible and come from a range of different areas.	
Work with the statistics software	

Notes:_____

_____