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WHITEPAPER

SIX SIGMA
GREEN BELT

QUALITY MANAGEMENT SYSTEM

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INTRODUCTION

Six Sigma is a process improvement methodology that concentrates on one or more key areas, namely cost, schedule and quality. By focusing on the delivered value from a customer's perspective, addressing business issues and eliminating non-value added activities for each product or service, organization's processes improve and its revenue increases. As a process-focused quality improvement approach, Six Sigma has been initially developed by Motorola in the 1980s, with the purpose of reducing errors and waste, as well as increasing the quality and effectiveness of engineering, manufacturing and service processes. Today, Six Sigma is widely used in service industries in improving customer service delivery and solving service related problems.

The aim of Six Sigma Green Belt is to prepare candidates for practicing basic statistics and interpreting Six Sigma core concepts. Green Belt candidates' expertise allows them to improve a process through Six Sigma methodology, as during the training they learn all aspects of improving a business by relying on Six Sigma best practices and procedures. Additionally, they will be able to be part of a team that identifies, analyzes and solves problems by using different tools and techniques for data collection.

The Six Sigma Green Belts are expected to work on medium to large projects, under the supervision of Black Belts. In addition, the Six Sigma Green Belts may also mentor or coach Yellow Belts who will potentially become their project team members.

Green Belts are classified as project leaders as well. During the implementation of Six Sigma role structure, Green Belts are considered as the second tier leaders. Meanwhile, in the hierarchy of Six Sigma pyramid following Black Belts and Master Black Belts, Green Belts belong to the fourth level. Provided that they are involved in the main management of projects, Green Belts are required to demonstrate leadership skills, similar to Black and Master Black Belts.

Finally, a candidate who possesses a Green Belt Certification is able to demonstrate a comprehensive knowledge of the DMAIC model in accordance with Six Sigma Body of Knowledge, usually known as SSBOK.

AN OVERVIEW OF SIX SIGMA GREEN BELT

Six Sigma Green Belt provides the necessary skills to successfully apply a field proven methodology that helps process improvement. Moreover, it positively influences data based decision making in solving problems and completing projects within predetermined deadlines.

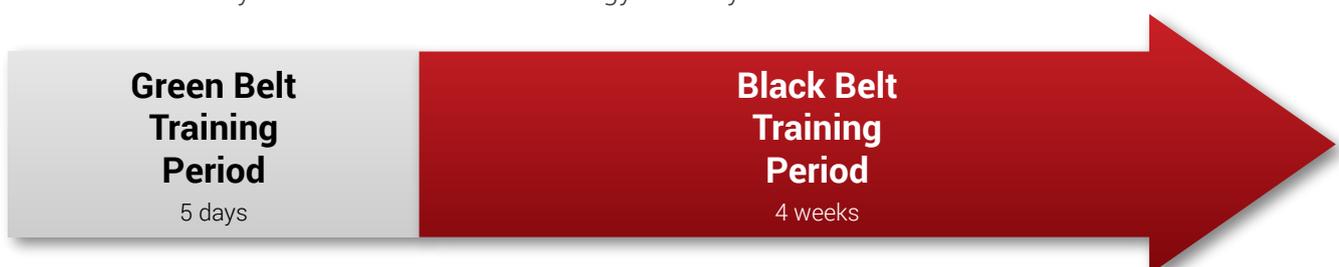
WHAT IS SIX SIGMA GREEN BELT?

The Six Sigma Green Belts will be able to lead a Six Sigma project by effectively implementing Six Sigma methodologies and concepts. Green Belts operate under the supervision of Black Belts, and are equipped with the necessary knowledge and clear comprehension of Six Sigma Methodology fundamentals. A Green Belt holds the responsibility of interdepartmental process improvement, or improvements of processes that flow within the organizations' departments.

For example, any process improvement within a procurement department is to be handled by a Green Belt, possibly by someone who is well-versed of the procurement processes. A Green Belt could as well play a valid role in a Black Belt project by undertaking a portion of the scope that is interdepartmental in nature.

Green Belt certified individuals are recognized as highly valuable due to the importance of their overall input in a particular project's performance.

While learning the basic statistics, Green Belts will be able to create different diagrams such as: Histogram, Pareto chart, Ishikawa, etc. and they will be equipped with the necessary skills to interpret the data from these diagrams. Additionally, Green Belts will be able to provide top management and co-workers with graphical displays that would facilitate decision making process. Through graphical displays, an employee will be able to easily understand the methodology used by a Green Belt.



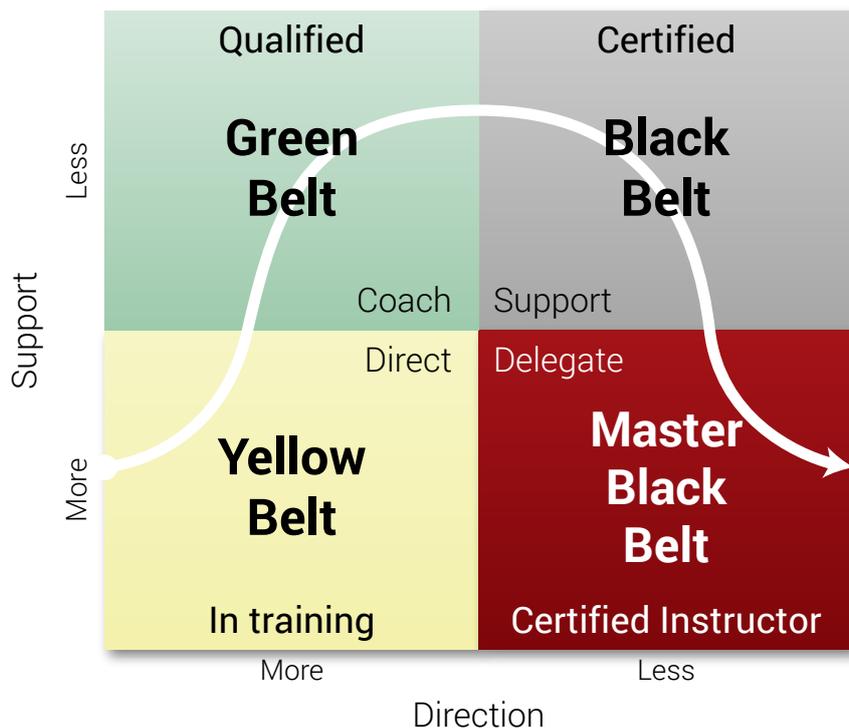
Six Sigma Belts Hierarchy

Six Sigma Master Black Belts: Individuals who possess a Master Black Belt Certificate are Certified Instructors of Black Belts.

Six Sigma Black Belts: Individuals lead cross functional projects and are responsible for solving project related problems. Usually, a Six Sigma Black Belt trains and coaches the project team members to ensure their preparedness to participate on a project that involves Six Sigma implementation.

Six Sigma Green Belts: Six Sigma Green Belts practice a suitable Six Sigma implementation for their own business area, and spend 20% of their time on managing projects. A Green Belt leads or co-manages some parts of a specific project since they do not have the required training to lead complex projects on their own.

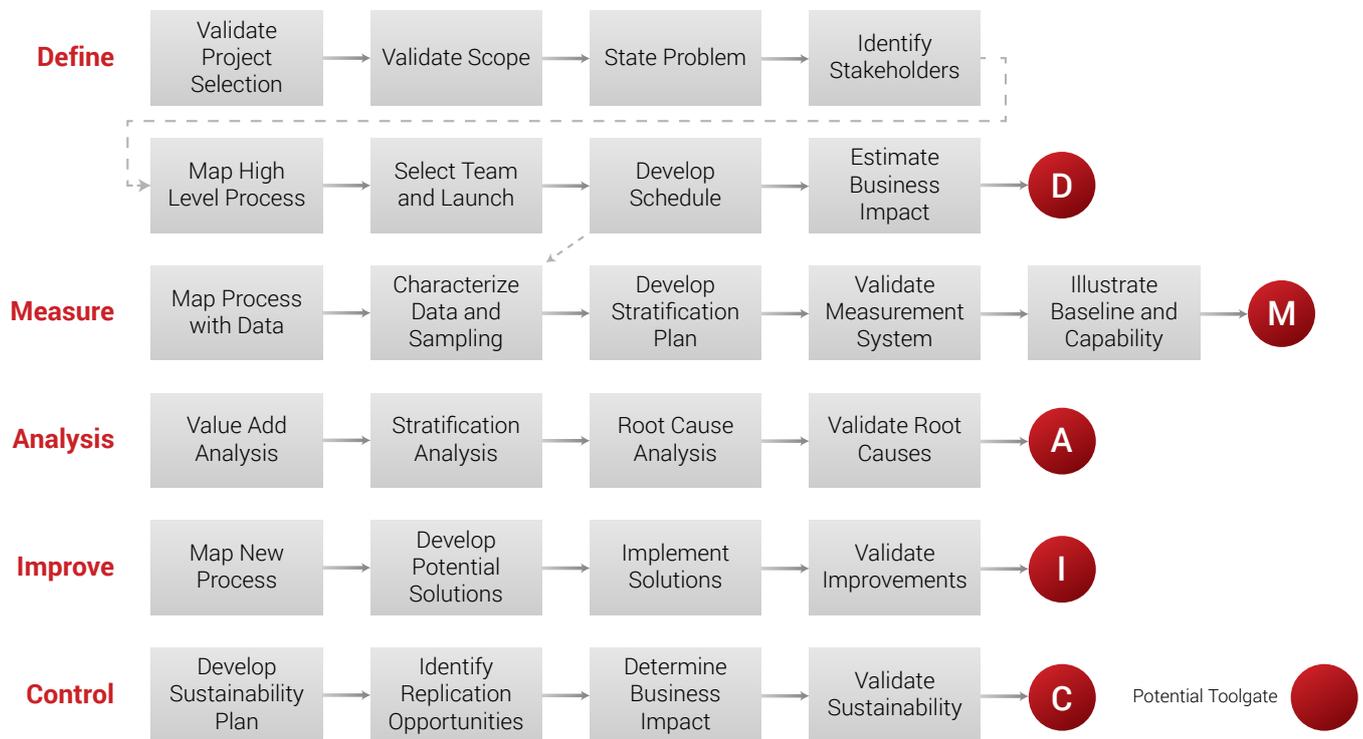
Six Sigma Yellow Belts: The candidates of a Six Sigma Yellow Belt will be able to understand the basics of Six Sigma and be introduced to the DMAIC model.



White Belt, on the other side, introduces candidates to the working knowledge of Six Sigma during a shorter period of time, as well as to the phrases to be applied in practical terms during project management. The White Belts will participate as core team members or subject matter experts in a project or one or more projects jointly with the Green/ Black Belts.

DMAIC Methodology

The most commonly used approach of Six Sigma for process improvement is DMAIC, which is an acronym for the following five phases:



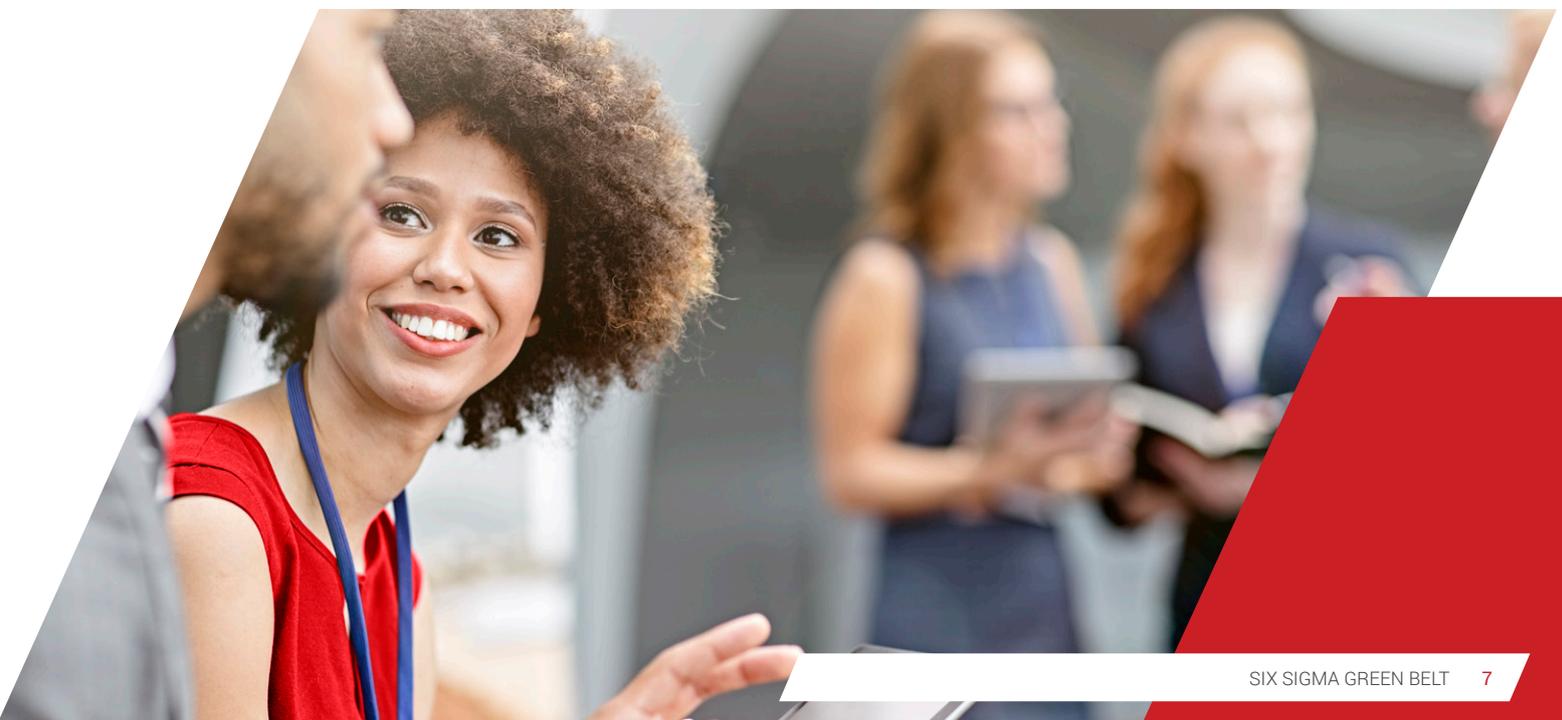
Define: Identify the problem and the opportunity for improvement.

Measure: Measure the performance of the processes.

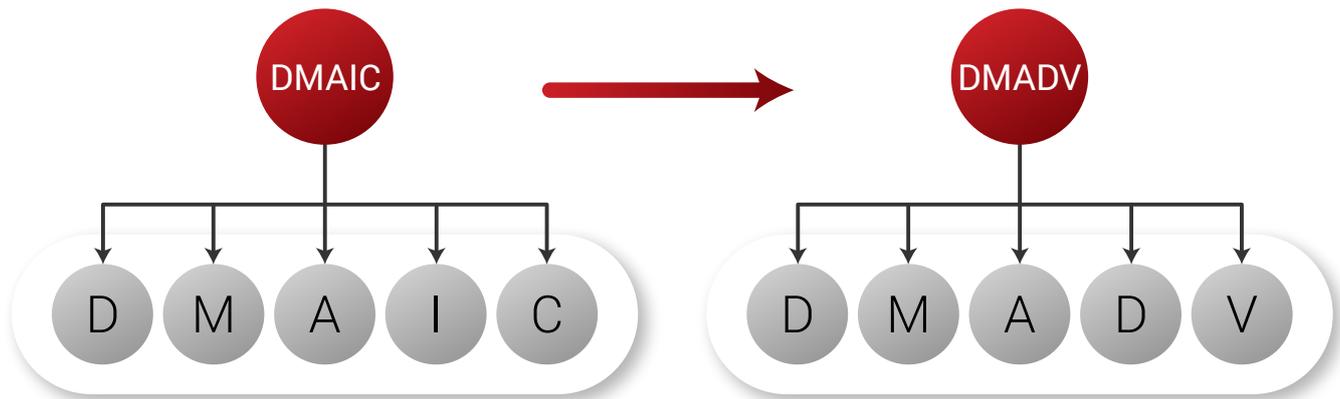
Analyze: Determine the root causes of defects.

Improve: Evaluate the performance and eliminate the root causes by implementing adequate solutions.

Control: Improve processes and ensure appropriate control of their performance.



DMADV Methodology



Another important approach in Six Sigma is the DMADV methodology. DMADV stands for: Define, Measure, Analyze, Design and Verify. The primary focus of the DMADV methodology is the development of new processes, products or services instead of improving the existing ones.

The DMADV phases are examined below:

Define: During this phase, the Six Sigma project team identifies the purpose of the project, and sets measurable goals for the improvement of the processes.

Measure: The Critical to Quality (CTQ) will be measured during this phase.

Analyze: During the analyze phase the process inputs will determine how they affect the process output. Additionally, the baselines will be facilitated for measuring the project's process improvement.

Design: The project team needs to use and adjust the existing processes in order to meet customer's expectations.

Verify: In the Verify stage of the DMADV, it is important to validate the design, ensure that it is acceptable and meets the stakeholders' requirements.

Six Sigma Green Belts – The Business Benefits

The Six Sigma Green Belt will lead to many benefits for your organization such as increasing the efficiency, customer satisfaction and reduction in process cycle times.

This certification ensures to prepare the candidates to further develop their skills and to solve less complex problems within their organizations. Furthermore, a Six Sigma Green Belt can decrease total defects, improve process flows, enhance knowledge and increase the organization's productivity.

The Green Belts are encouraged to improve process performance, deliver medium to high impact projects and achieve significant cost savings in their organizations. Six Sigma Green Belt acquires the special skills and knowledge required before leading or taking part in any continuous improvement project.

Green Belts will effectively use the Six Sigma tools in handling organizations' customers and supplier's demands, to achieve business improvement results. Compared to Black Belt projects, Green Belt projects are less complex from a technical point of view and less costly in terms of project savings. The success of a Green Belt project may determine the intensity of progress in a Black Belt project.

Training and Certification of Professionals

PECB has created a training roadmap and personnel certification schemes which are strongly recommended for Six Sigma candidates seeking to get certified against PECB Six Sigma Green Belt.

Certification of individuals serves as documented evidence of professional competencies and experience, while also proving that the individual has attended one of the related courses and has successfully passed the exams.

Personnel certifications demonstrate that the certified individual possesses the defined competencies based on the best practices. It also helps organizations to make an informed selection of employees or services based on their competencies. Finally, the certification provides incentives for the individual to constantly improve his/her skills and knowledge, and serves as a tool for employers to ensure that the provided training and awareness sessions have been effective.

PECB training courses are offered globally through a network of authorized training providers and are available in several languages. The table below provides an overview of the Six Sigma Green Belt training course.

Six Sigma Training	Short description	Who should attend?
Six Sigma Green Belt	<ul style="list-style-type: none">• 5 days training course• Introduction to process improvement methods and tools	<ul style="list-style-type: none">• Managers or consultants involved with and committed to process improvements• Individuals seeking to improve business, production or service processes• Six Sigma project team leaders and/or team members• Expert advisors seeking to master the implementation of a Six Sigma project

A candidate who has completed the exam of Six Sigma Green Belt will be granted the PECB Certified Six Sigma Green Belt credential. Through this certification, the candidates will be able to identify and understand the available methodologies to improve a process.

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