

5 days workshop on

## Six sigma- Green belt

For Executives, Production managers, Quality and Process engineers

16-20<sup>th</sup> November 2009, Timisoara

We would like to invite you to the 5 day Six sigma Green belt training, with a certification option. Certification will be made by Van Goubergen P&M, Belgium.

In this training we will teach production, process and quality engineers the methods and tools:

- to define the requirements of the customer,
- to define the production and quality risks
- to analyze the production in order to minimize the costs of rework and scrap and to improve the quality of the product.

All the methods will be explained using real life application examples.

### INTRODUCTION TO SIX SIGMA, GREEN BELT

This course is designed to provide a broad understanding of the Six Sigma improvement methodology, concepts, and language.

The Define-Measure-Analyze-Improve-Control (DMAIC) methodology is presented with case studies and examples drawn from manufacturing applications. The integration of Lean Manufacturing and Six Sigma is also addressed.

With a high practice orientation, a third of your time will be spent working through interactive practical exercises and online assessments.

This course is an interactive learning experience with classroom discussion, toolbox, exercises and manufacturing examples.

This training boost your organization's product performance and productivity, reduce costs and lead time, accelerate cash flow and assess your operational processes.

Any manufacturing operation can be seen from a system point of view:

**Inputs** (material, labor, capital, energy and information) go into the system and the **outputs** are the customer products. Identifying systematically problems and solutions to reduce rework, scrap and waste.

#### SCHEDULE OF THIS WORKSHOP:

##### Day 1

- Understand the benefits and implications of a Six sigma program, and relate Six sigma concepts to the overall business mission and objectives.
  - Project structure
  - The six sigma measurement
  - Lean manufacturing
  - Design for Six sigma
- The voice of the Customer and critical parameters.
- Think about your organization as a collection of processes, with inputs that determine the output.
  - Process mapping and Process FMEA
  - Examples
- Recognize the five-step D-M-A-I-C model used to improve the processes.

##### Day 2

- Basic statistics: mean, spread measurements, box plot, process distribution, t-test and F-test.
  - Examples.
- Use the concept of a Sigma Level to evaluate the capability of a process
  - Process (Cpk short/long) and measure capability (MSA)
  - Machine capability (Cmk)
  - Examples

##### Day 3

- Experiments in manufacturing to improve products and machines: (Shainin methods)
  - Problem cause elimination and detection by component search.(The components of the product)
  - Cause detection by compared analysis to detect the most important process variable
  - Cause detection by variation analysis using different process variables (Operator, Machine, Workmethod)
  - Cause detection by process process variable search (Adjustments)
  - Industrial examples.

#### Day 4

- Data analyse and improve methods using MS/Excel.
  - Practical training on PC
  - Industrial examples

#### Day 5

- Experiments in manufacturing to improve products and machines:
  - Design of experiments (DOE)
  - Industrial examples.
- Statistical process control (SPC) in production
  - Examples
- Definition of projects/homework for certification

#### CERTIFICATION GREEN BELT - OPTIONAL :

#### The certification report

A project report has to be submitted with enough information to execute a correct evaluation of the performed work.

This report is in the form of an internal factory report and the executed analysis are attached for reference.

#### Possible items of the project report are (no restriction):

1. Description of the main functions of the product
2. Process-step description
3. The Customer requirements.
5. Process parameters and PFMEA
6. Selection of critical parameter.
7. Process capability analysis before implementation
8. Analysis and improvements, Shainin, DOE experiments..
9. Process capability analysis after improvement.
10. Control (SPC)

It is possible to send draft reports in the meantime, for evaluation, to **Peter Buntinx, Vangoubergen P&M.**

The final version has to be available on the certification date.

## The presentation and evaluation

We advise the following structure, but it is not restrictive:

Item	Duration (min)
Description (short) of the product: main functions and process-steps	3
Customer functional requirements (Top 5)	3
Process parameters (Top 5)	5
Selection of critical process parameter argumentation	5
Process capability analysis	2
Analysis and improvement: Shainin.....etc	10
Process capability analysis after	2
<b>Total</b>	<b>30 min</b>

### Date/location

**To be announced.**

### Participation

If possible, all team members should be present. Exceptions have to be accepted by the factory management.

The presentation is executed by the team leader or a team member.

The team leader can direct dedicated issues in his presentation/defense to a team member.

### Duration

The total duration is 45 minutes. The presentation itself takes 30 minutes.

The next 15 minutes are foreseen for questions by the evaluator.

Following aspects with their score are evaluated:

ITEM	DESCRIPTION	SCORE
1.	The project approach and teamwork. The different project steps, activity planning and realized Commitments The team interactions during the presentation	/10
2.	The application of several tools as a red thread from problem to solution The improved application of current methods The application of new methods	/20
3.	The technical creativity in the search to solutions	/10
4.	The scientific and statistical foundation.	/20
5.	The quality of the Six sigma project report	/10
6.	The product quality improvement and/or cost-reduction for Donaldson.	/20
7.	A smooth presentation and quick defense	/10

Following assessment levels are applicable:

High distinction      80%  
Distinction            70%  
Satisfaction            60%  
No satisfaction        <60%

The team didn't demonstrate enough the execution of the Six Sigma tools.  
The evaluator didn't find enough added value or project results.

#### YOUR INSTRUCTOR:



Peter Buntinx has 20 years of experience with Philips as internal consultant for process improvement in manufacturing, engineering and R&D.

He is currently working for Van Goubergen P&M Productivity Improvement, an international training and consulting company based in Belgium. He has done consulting work for BMW, Siemens, TI Automotive, CNH, Masterfoods, Barco and Agfa.

He is a Black Belt Six Sigma certified by the American Society for Quality (ASQ).

 **PRACTICAL DETAILS**

This workshop will be conducted in **English**. A Romanian trainer would also be present on the duration of the workshop and the handouts of the workshop will be in English.

**When?** 16-20<sup>th</sup> November, 2009.

**Where?** Timisoara

**Registration?** Registration fee for the training is **950 Euro/person** (excl VAT). Payment will be made in advance. Depending on the no. of participants enlisted from the same company, discounts are applicable. This fee includes handouts of all presented material and lunch on all days. To register for this workshop please send last page signed and stamped by fax or email.

**Audience?** Executives, Production Managers, Quality Managers, Quality Engineers, Process Engineers - anyone interested in improving the performance of their organization

**Deadline?** Registration and advance payment until **9<sup>th</sup> November 2009**.

**Formular de inregistrare**

**PRODUCTIVITY CENTER SRL**

**Six sigma Green Belt**- curs deschis  
16-20 Noiembrie, Timisoara

Compania \_\_\_\_\_

Persoana de contact \_\_\_\_\_ Pozitia \_\_\_\_\_

Adresa \_\_\_\_\_ codpostal \_\_\_\_\_

Telefon, Fax,

Email \_\_\_\_\_

CUI \_\_\_\_\_ Nr. Reg. Comertului \_\_\_\_\_

IBAN \_\_\_\_\_ Banca \_\_\_\_\_

**Participanti inregistrati:**

1. Nume \_\_\_\_\_ Pozitie \_\_\_\_\_ email \_\_\_\_\_

2. Nume \_\_\_\_\_ Pozitie \_\_\_\_\_ email \_\_\_\_\_

3. Nume \_\_\_\_\_ Pozitie \_\_\_\_\_ email \_\_\_\_\_

4. Nume \_\_\_\_\_ Pozitie \_\_\_\_\_ email \_\_\_\_\_

5. Nume \_\_\_\_\_ Pozitie \_\_\_\_\_ email \_\_\_\_\_

Prin prezentul formular inregistrez pentru cursul "Six sigma Green Belt" participantii de mai sus. Ma angajez sa platesc catre SC Productivity Center SRL taxa de **950 euro / participant** (plus TVA) in avans conform factura proforma, pana in data de **9 Noiembrie 2009**.

**Discount :**

**3-5 persoane: 10%**

**6-9 persoane: 15%**

**10-15 persoane: 20%**

**Condiții privind înscrierea :**

Anularea unei înscrieri se face în scris, cel mai târziu cu 7 zile calendaristice înainte începerii seminarului . Pentru anularea cu mai puțin de 7 zile calendaristice se va returna doar 50% suma platita. Se accepta inlocuirea persoanelor inscrise cu pastarea numarului de inregistrari la curs.

Semnând și ștampilând acest formular, vă declarați de acord cu toate condițiile de mai sus. Productivity Center își asumă obligația de a organiza seminarul conform condițiilor prevăzute în invitație și conform programului menționat.

**Prezentul formular de inscriere tine loc de contract între parti.**

Nume și prenume:

Semnătura.....

.....

Data:

Ștampila

