



## 1st Workshop Series

# Specific TRIZ Tools

**as Part of the MA TRIZ Level 3 Training 18/19**

**with Sergei Ikoenko**



*Diese Spezialseminare mit Sergei Ikoenko finden im Rahmen des MA TRIZ Level 3 Trainings 2018/19 statt.*

In order to give interested people the chance to get to know some "advanced" TRIZ tools without register for a whole training session (e.g. duration of Level 3 is ten days) we expand the possibilities and offer (as part of a certification training) 1- or 2-days workshops in which specific TRIZ tools are explained and applied in detail.

**Ort / Location:** Philips Austria GmbH  
A-9020 Klagenfurt, Koningsbergerstraße 11, Austria

**Trainer:** Sergei Ikoenko, TRIZ Master and Former President MA TRIZ

### **Topic (1) ARIZ – Algorithm of Inventive Problem Solving**

**Duration:** 2 days (09:00 – 17:00)  
**Termin / Date:** December 06 & 07, 2018 (Thursday & Friday)  
**Costs:** 690 € (excl. VAT)

### **Topic (2) System of Standard Inventive Solutions**

**Duration:** 1 day (09:00 – 17:00)  
**Termin / Date:** January 07, 2019 (Monday)  
**Costs:** 420 € (excl. VAT)

### **Topic (3) TRIZ and Patent Strategies**

**Duration:** 1 day (09:00 – 17:00)  
**Termin / Date:** January 08, 2019 (Tuesday)  
**Costs:** 420 € (excl. VAT)

### **Topic (4) S-Curve Analysis & MPVs (Main Parameter of Value) What Innovation Strategy is Best for Your Product Right Now?**

**Duration:** 1 day (09:00 – 17:00)  
**Termin / Date:** January 09, 2019 (Wednesday)  
**Costs:** 420 € (excl. VAT)

**Sprache / Language:** English  
**Veranstalter:** Jantschgi C&R

**Anmeldung / Registration** bis 02. Dezember 2018 / till December 02, 2018

DI Jürgen Jantschgi, Jantschgi C&R

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## Trainer & Organization



### **Sergei Ikoenko, Dr.-Eng., Ph.D., P.E., Professor**

TRIZ Master (MA TRIZ Level 5) &  
Chairman of MATRIZ Council of Methodology and Expertise (Certification)  
Leading innovation consultant, who spearheaded TRIZ Innovation programs at General Electric, Procter & Gamble, Intel, Samsung Electronics, Hyundai Motor and other companies resulting in hundreds of patents and million dollars of ROI.  
Teacher of Innovation at MIT and Tufts University.



### **Jürgen Jantschgi, DI**

Jantschgi C&R, Play Innovation – TRIZ & more  
MA TRIZ Level 3 & TRIZ Champion (since Sept. 2018)  
Higher College for Engineering Wolfsberg (HTL Wolfsberg), Headmaster

### Target audience:

- management level people, engineers, scientists, entrepreneurs, strategic planners ....
- people with (some) TRIZ experiences, interested in specific (advanced) TRIZ tools
- graduates of MA TRIZ trainings interested in refreshments on specific tools

Participants will get official certificates for special topic workshops.

Attendees can qualify for discounts for future MA TRIZ Level 2 or Level 3 programs.

### Short introduction – Content & Agenda of the workshops:

## **ARIZ – Algorithm of Inventive Problem Solving**

### **(G. Altshuller's approach)**

**December 06 & 07, 2018 (Thursday & Friday)**

#### Content / Agenda:

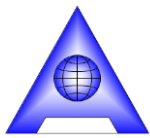
- Introduction. Three major goals of ARIZ.
- The logic of key problem modeling in ARIZ.
- Conflicting pairs and their types. How to select the best model of the conflicting pair.
- Interconnections and crosschecks among ARIZ steps and how to take ARIZ steps avoiding typical mistakes.
- Working with IFR: its levels and resource selection.
- Tools for maximizing the obtained solutions:
  - Super-Effect analysis
  - Clone Problems
  - Trends enhancer
  - Integrated concept generator
- Typical mistakes in ARIZ and how to avoid them.
- Hands-on practice on ARIZ.

This workshop covers the material from Altshullers original seminars on ARIZ for TRIZ instructors that exist only in notes!

ARIZ is the most powerful, but at the same time is the most complex of all TRIZ problem solving tools. Being a mandatory part of Level 3 and Level 4 of MATRIZ certification it is often a challenge for many applicants.

The workshop focuses on the internal ARIZ logic that allows to go through ARIZ cross-checks and to avoid the usual mistakes. The logic was taught by G. Altshuller, but has never been published in public domain.

The workshop will be very useful for both Level 2 and Level 3 certified people as well as those who want to avoid the ARIZ mistakes in their Level 4 application package.



## Short introduction – Content & Agenda of the workshops:

### **System of Standard Inventive Solutions**

**January 07, 2019 (Monday)**

Content / Agenda:

- Problem modeling in TRIZ.
- Rules of remodeling key problems from one TRIZ model into others.
- System of Standard Inventive Solutions (most often used recommendations form each of five classes).
- S-F model and function model relationship. "Unfolding" function models into S-F models.
- Hidden TRIZ tools - using Inventive Principles for resolving problems models as S-F models.
- Hands-on practice on using Standard Inventive Solutions.

System of Standard Inventive Solutions is one of the most effective problem solving TRIZ tools, however many people avoid using it. One of the reasons is that some of Standard Inventive Solutions are not applied often while others are very instrumental practically in every project.

The workshop focuses of the most often used recommendations from each of five classes and explains the usage of the tool the way G.Altshuller did it at his workshops.

The workshop will be useful for people who have obtained Level 1 of MATRIZ certification and for Level 2 TRIZ practitioners who would like to refresh their knowledge on the Standard Inventive Solutions and to experience Altshuller's approach in using the tool.

### **TRIZ and Patent Strategies**

**January 08, 2019 (Tuesday)**

Content / Agenda:

- Introduction: Patent Strategies definition & Overview of TRIZ and Product Innovation Roadmap
- Function Analysis and its specifics for competitive patent circumvention.
- Trimming as a competitive circumvention strategy. Different cases of patent circumvention by Trimming:
  - "Dragon" patents.
  - Non-existing components in patent claims.
- Patents on Technological Processes and their circumvention using trimming approach and substitution approach.
- Hands-on practice on circumventing competitive patents.
- Circumvention of competitive patents through substitution. Doctrine of Equivalents:
  - Definition of Doctrine of Equivalents & Prosecution History Estoppel.
  - Function-Oriented Search: TRIZ tool for Substitution strategy
- The Antidote Strategy.
- Picket Fence Strategy
  - Definition of Picket Fence Strategy
  - S-Curve analysis, MPV analysis & Trends of Engineering System Evolution for patent strategies
  - Using Trends of Engineering System Evolution and CECA for development of dependent claims and firewalls
- Alexandrov's Matrices for identifying areas of potential patenting.
- Super-Effect Analysis and its usage to prolonging patent's life. Resource Analysis in patenting
- Patents on materials and finding new areas of patenting a specific material.

This 1-day workshop will teach the participants various patent strategies: competitive patent circumvention approaches, ways to strengthen your own patent applications, development of "firewalls", etc., using tools of TRIZ.



## Short introduction – Content & Agenda of the workshops:

### **S-Curve Analysis & MPVs (Main Parameter of Value) What Innovation Strategy is Best for Your Product Right Now? January 09, 2019 (Wednesday)**

#### Content / Agenda:

- Introduction: Notion of MPV – Main Parameter of Value and its difference from the Voice of the Customer
- Types of MPVs: strategic and functional; unmet and satisfied; latent and tacit.
- Approaches for identification of latent MPV candidates:
  - using Function Analysis of the product
  - using Trends of Engineering System Evolution.
- MPV Analysis: what kind of innovation the product needs.
  - Pragmatic S-Curve Analysis
  - S-Curve Analysis indicators and recommendations
- Development of innovation strategies for:
  - Disruptive Innovation
  - Sustaining Innovation. Building Function-Cost Diagrams

Typically, most companies are well adept at deploying Voice of the Customer (VOC) tools to understand the things that are important to their customers. What do customers want? Simply ask them. However, we distinguish three important caveats with regard to deploying VOC data:

- (1) It is important to distinguish between what customers say they want and what they are actually willing to pay for. Understanding this distinction is critical when allocating R&D investment funding.
- (2) Customers cannot ask for features that they are unaware of (you don't know, what you don't know).
- (3) Customers may not ask for features that they do not believe are technically feasible.

To address the second and third issues, a tool called Voice of the Product (or Voice of Technology) is used, a complementary approach to VOC aimed at surfacing unmet customer needs. By "interviewing" the product with the aid of a number of analytical tools, the goal is to uncover unmet needs that can be exploited through innovation and offer the potential to capture market share, drive growth.

Uncovering the unmet needs is only one step on the pathway to success. Once those needs are surfaced and validated, there is a way of translating these needs into the functions responsible for driving performance. And, by analytically determining the underlying physical parameters that can constrain performance, we are then well positioned to understand what type of innovation our product needs now – disruptive or sustaining.