

The Techniques to Detect and Solve Innovative Problems

— The Proposal regarding “Two types of Redesigned Contradiction Matrix” for TRIZ Beginners —

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Abstract

We think that skilled TRIZ practitioners studying and implementing some of TRIZ techniques several times are accustomed to a series of procedures to define each problem, formulate some challenges and create highly-valued ideas. On the other hand, it's very hard for TRIZ beginners to reach effective solutions through utilization of existing TRIZ techniques. Therefore, in this paper, we would like to propose “Two types of Redesigned Contradiction Matrix (RCM)” developed by us as one of effective TRIZ techniques for TRIZ beginners.

Firstly in the paper, we want to make “Real Required Functions (RRFs) for TRIZ practitioners” clear. In other words, we try to define “What do we have to do in our minds?” and “What should we do right now ?” with thinking deployment about “RRFs”. Secondly, we would like to introduce two types of “RCM” for TRIZ beginners to understand and utilize easily. Because we noticed that not only skilled TRIZ practitioners but also some of TRIZ beginners actively use “Contradiction Matrix developed by Altshuller (Original CM)” as a convenient technique to select some applicable principles from “40 principles” and create ideas by utilizing them. We basically focus on “a series of Functions” in the system and consider “Required Functions (RFs)” for each component in it at the upstream stage of product development activities. That is to say, we are required to define the challenges related to “Functional Parameters (FPs)” at this stage. At next stage after development design of product, we have to search the challenges regarding to “Concrete Implementation Tools (CITs)” to realize the system. That is why we decided to prepare two types of “RCM”. In order to develop them, we tried to analyze “Original CM” and categorize “39 parameters” on it as “two types of “Redesigned New Parameters (RNPs) for two types of “RCM” from the standpoint of TRIZ beginners. In addition, we have the guidelines for beginners to use two types of “RCM” easily at our fingertips. We expect to be used proposed “RCM” for TRIZ beginners as the gate to enter “attractive TRIZ world” without having a resistance to utilize a series of TRIZ techniques.