Bibliography of Papers by Takahara in 2008- 2012

1. The position of the papers

In 2003 to 2007, Takahara investigated the method of **Resolving Differences** and a way how to express it by making clear the concepts of object, object world which is combination of objects, attributes, granularity and function. Granularity is range of space and time and / or attributes.

Resolving Differences in broad sense consists of Resolving Differences in narrow sense which is usual object change following the articles [10] [TS2003] and [14] [Ts2007] and going together which is expansion of usual contradiction.
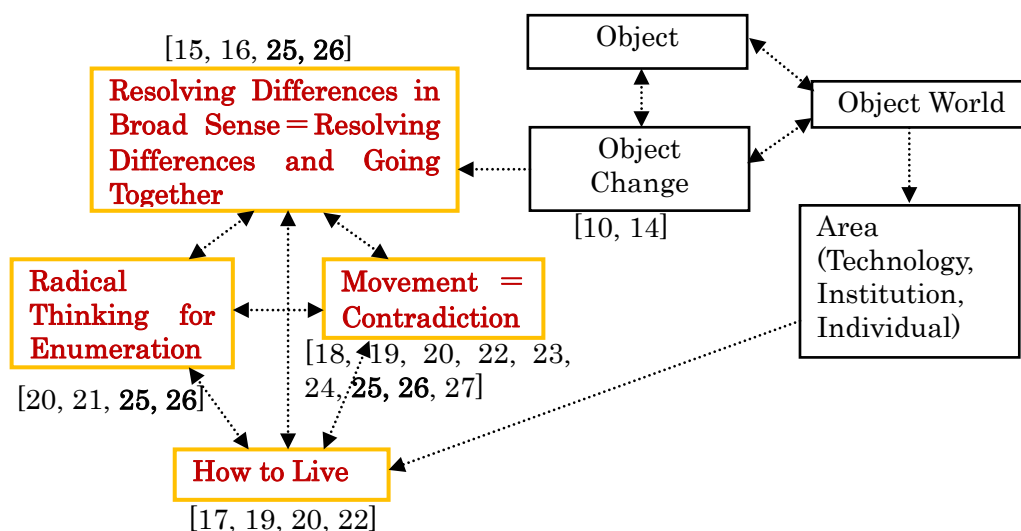
Every movement of nature, human behavior and thought are Resolving Differences in broad sense from a viewpoint of contents. And ideal human thought is **Radical Thinking for Enumeration** from a viewpoint of form.

The study on what bring Resolving Differences makes me approach the form of Radical Thinking for Enumeration. Radical Thinking for Enumeration is a generalization of attitudes and method of K. Marx and G. S. Altshuller.

It is a movement that causes Resolving Differences in narrow sense and going together which is expansion of usual contradiction. This movement is used to be dealt with contradiction by Genrikh S. Altshuller. Contradiction by Altshuller is an expansion of that of Marx and Engels. It is contradiction that is movement viewed from the viewpoint of dynamic structure. Movement and contradiction have same granularity from a viewpoint of range of space and time and different granularity from a viewpoint of attributes.

The world is approximately an assemblage of movements or contradictions. Movement in this sense or contradiction is an approximate unit of the world. Movement in this sense or contradiction consists of matter and dynamic relation.

Movement in this sense or contradiction can deal with every human behavior including technology, institution and individual action and thought. So we can deal with the way how to live. Next figure shows main theme and article number in left side in 2008- 2012 and main theme in right side in 2003- 2007.

Abbreviation of article is shown in [Serial number since 2003] [Acronym of conference, year].
Acronym of conference is as follows.
  TS : TRIZ Symposium in Japan
  FIT : Forum on Information Technology
  IEICE : General Conference of the Institute of Electronics, Information and Communication Engineers
  CGK : Conference of Institutes Associated with Electronics and Information in Tyugoku District

Example: [15] [TS2008]

2. Bibliography

[15] [TS2008] TAKAHARA, "The General Picture of TRIZ From the Viewpoint of Changing Objects—A Method of Resolving Differences Based on the Concepts of Functions and Process Objects Part 3— ", The 4th TRIZ Symposium in Japan, 2008.

An important thing is only to make a necessary change on a necessary Object in some necessary way. If we could find minimum types of elements, by the combination of which we could reconstruct the original one in the area of Object and making changes, it could be said to obtain unified method of changing Objects. As a part of this study I investigate the types of changing Objects within two attributes and two Objects.
These studies make clear that TRIZ is an assemblage of changes of Objects consisting of segmentation and merging of attributes, segmentation and merging of Objects and change of attributes including handling "physical contradiction" and "technical contradiction".
Object has inner structure and attributes which produce function to the outside. From this point of view I classify the existing 40 principles in TRIZ into eight types of principles consisting of basic principles, structure principles, dynamic principles, replace principles, plus principles, minus principles, equal principles and "anti" principles.

[16] [FIT2008] TAKAHARA, "A Trial Study of Changing Two Objects – Reconsidering Object Part 7 –", FIT2008,2008.

My purpose is to make a new formal theory or logic to innovate the world using TRIZ. The requirements on the ideal theory of recognition and changing of the world are to handle every object to be recognized and to operate it in every possible types of changing object in every applying area including technology and institution.
I try to enumerate several types of changing Object within two attributes and two Objects. This is a mixture of intentional change which I call Resolving Differences, unintentional change and autonomous change including contradiction in the area of technology and institution.

[17] [TS2009] TAKAHARA, "TRIZ as the Way of Life?", The 5th TRIZ Symposium in Japan, 2009. (Slides only)

My starting point is an intention to expand applicable area of TRIZ to wider area. Although TRIZ had its origin in technology, it has been widely applied to so-called "non-technical" area such as business area.
On the other hand TRIZ as I showed in slide No.9 in 2008, I recognized that TRIZ have a possibility of unified thought and method applicable to every area including not only technical area but also personal area and institutional area.
So I intend to apply TRIZ to a way of life or how to live. I reconsider the way of life based on Nakagawa's Essence of TRIZ in 50 Words;
"TRIZ provides a dialectic way of thinking,
    i.e.,
    to understand the problem as a system,
    to image the ideal solution first, and
    to solve contradictions."
To live is to change Objects to realize value. How to live is the attitudes or thought and method to live.

[18] [FIT2009] TAKAHARA, "Dependency of Dialectic Logic on Granularity and Density", FIT2009, 2009. (Japanese only)

[19] [TS2010] TAKAHARA, "The Ideal of TRIZ —TRIZ as the Way of Life? Part 2—", The 6th TRIZ Symposium in Japan, 2010.

TRIZ could be applicable to every area including technological area and institutional area because TRIZ is an assemblage of methods consisting of changing one attribute, solving contradictions, segmenting and merging of attributes and objects, as I presented at the 4th Japan TRIZ Symposium.
This paper surveys a concept of object, methods and thought of TRIZ. I will investigate the movement of objects of consciousness at the beginning process of barter as an example in the area which usual TRIZ

does not deal with. And I will show unified four types of realization of every purpose and propose a radical thinking for enumeration.

[20] [FIT2010] TAKAHARA, "Radical Thinking for Structure of Opposites and Enumeration in TRIZ and the Way of Life", FIT2010, 2010. (Japanese only)

[21] [CGK2010] TAKAHARA, "Specifying Object and Change of Judgment by Radical Thinking for Enumeration", Conference of Institutes Associated with Electronics and Information in Tyugoku District, 2010. (Japanese only)

[22] [TS2011] TAKAHARA, "A Preparatory Study for Resolution of Contradiction of Unity—For the Way of Life—", The 7th TRIZ Symposium in Japan, 2011.

Dialectical Logic had been widely taught in former Soviet Union. Attitudes to review this Dialectical Logic by Genrikh S. Altshuller gave TRIZ a powerful possibility. Every philosophy, every thought even every method was appeared to the earth by attitudes of the originator to review existing one.

It is a valuable lesson taught from history for us if we forgot to continue to review every philosophy, every thought or every method, they stopped to expand and even corrupted. Originally Dialectical Logic teaches us the way of object how to interact each other and how to change all the time. We should continue to review Dialectical Logic all the time.

Contradiction consists of two opposites and mutual relation between two opposites from inner point of view. It has function of movement from outer point of view. It is an approximate element of structures and processes of the world.

Contradiction has three types which consist of autonomous movement, movement to ignite action and that of unity. "Physical contradiction" has three types. "Technical contradiction" has four types.

The form of human history especially in institutional area is segmenting objects and partly merging object to acquire progress in life. But now we need some unification between object and I, between community and I, between viewpoint and attitude, between philosophy and method and humble attitude and critical attitude etc. These "opposites" form contradiction of unity.

The final ideal can be obtained by resolving "Technical Contradiction 2" and Contradiction of unity. Continuous every action or thought of every person can contribute to the final ideal.

[23] [FIT2011] TAKAHARA, "Re-structuring Dialectical Logic", FIT2011, 2011. (Japanese only)

[24] [IEICE2012] TAKAHARA, "Logic of the Birth of Barter — For Restructuring Dialectical Logic by Expanded Contradiction Model—", General Conference of the Institute of Electronics, Information and Communication Engineers, 2012. (Japanese only)

[25] [FIT2012] TAKAHARA, "How to Manage Granularity, Enumeration, Relation and Movement", FIT2012, 2012. (Japanese only)

[26] [TS2012] TAKAHARA, "Radical Thinking for Enumeration and Contradiction", The 8th TRIZ Symposium in Japan, 2012.

Correct thinking consists of setting correct granularity of object and method from among enumerated objects and methods and adapting correct logic under correct value.

One of requirements of correct thinking is to manage granularity of object, enumeration of objects.

Granularity is size, magnitude or scope in space and/ or time and degree of abstraction of attributes of something which is specified by points of view.

Granularity and enumeration have mutually related constraint. We can get correct granularity of object only from among the perfectly enumerated objects. Without enumeration of objects we might miss the adequate granularity of object.

Granularity of object and enumeration of objects is the base of relation between objects and movement of object. At first sight granularity and enumeration are important only in the situation of changing objects

adequately. But we will later notice the importance of them in the situation of making a discovery of a type or law from among various phenomena.

Usually we do an act of changing objects remaining unconscious of granularity of object, enumeration of objects and value.

In this paper I propose a way to manage granularity of object and enumeration of objects consciously. In this context constraints between granularity and enumeration are also shown.

Contradiction is re-formulated by managing granularity and enumeration.

Contradiction is either generalized "Physical Contradiction" which two attributes are going together or "Technical Contradiction" which two values are resolving differences. All movement is contradiction and all change is caused by movement.

In Chapter 3 I propose some method of managing granularity and enumeration of objects consciously, which gives a formal ground of Radical Thinking of previous papers[TS2009] [TS2011].

In Chapter 4 I re-formulate contradiction by managing granularity and enumeration.

In Chapter 5 I summarize methods of resolving differences.

[27] [CGK2012] TAKAHARA, "Types of Constraint Satisfaction in Contradiction", Conference of Institutes Associated with Electronics and Information in Tyugoku District, 2012. **(Japanese only)**

3. List of Papers

TRIZ Symposium in Japan
[15] [TS2008] TAKAHARA, "The General Picture of TRIZ From the Viewpoint of Changing Objects—A Method of Resolving Differences Based on the Concepts of Functions and Process Objects Part 3—", The 4th TRIZ Symposium in Japan, 2008.
[17] [TS2009] TAKAHARA, "TRIZ as the Way of Life?", The 5th TRIZ Symposium in Japan, 2009. (Slides only)
[19] [TS2010] TAKAHARA, "The Ideal of TRIZ —TRIZ as the Way of Life? Part 2—", The 6th TRIZ Symposium in Japan, 2010.
[22] [TS2011] TAKAHARA, "A Preparatory Study for Resolution of Contradiction of Unity—For the Way of Life—", The 7th TRIZ Symposium in Japan, 2011.
[26] [TS2012] TAKAHARA, "Radical Thinking for Enumeration and Contradiction", The 8th TRIZ Symposium in Japan, 2012.

FIT （ Forum on Information Technology ）
[16] [FIT2008] TAKAHARA, "A Trial Study of Changing Two Objects – Reconsidering Object Part 7 –", FIT2008,2008.
[18] [FIT2009] TAKAHARA, "Dependency of Dialectic Logic on Granularity and Density", FIT2009, 2009. (Japanese only)
[20] [FIT2010] TAKAHARA, "Radical Thinking for Structure of Opposites and Enumeration in TRIZ and the Way of Life", FIT2010, 2010. (Japanese only)
[23] [FIT2011] TAKAHARA, "Re-structuring Dialectical Logic", FIT2011, 2011. (Japanese only)
[25] [FIT2012] TAKAHARA, "How to Manage Granularity, Enumeration, Relation and Movement", FIT2012, 2012. (Japanese only)

In the Other Institute
[21] [CGK2010] TAKAHARA, "Specifying Object and Change of Judgment by Radical Thinking for Enumeration", Conference of Institutes Associated with Electronics and Information in Tyugoku District, 2010. (Japanese only)
[24] [IEICE2012] TAKAHARA, "Logic of the Birth of Barter — For Restructuring Dialectical Logic by Expanded Contradiction Model—", General Conference of the Institute of Electronics, Information and Communication Engineers, 2012. (Japanese only) [27] [CGK2012] TAKAHARA, "Types of Constraint Satisfaction in Contradiction", Conference of Institutes Associated with Electronics and Information in Tyugoku District, 2012. (Japanese only)
[27] [CGK2012] TAKAHARA, "Types of Constraint Satisfaction in Contradiction", Conference of Institutes Associated with Electronics and Information in Tyugoku District, 2012. (Japanese only)