

Appendix 3 to Multi-stage TRIZ Certification Regulations

TRIZ Level 5 (TRIZ Master) Certification Regulations

Updated version as of February 21, 2014

1. TRIZ Level 5 (TRIZ Master) Certification Regulations is an appendix to Multi-stage TRIZ Certification Regulations accepted at MA TRIZ and assuming a 5-level certification system. TRIZ Master qualification corresponds to level 5 and is the top professional level within this system. Issuance of TRIZ Master diplomas to specialists, who made the largest contribution to TRIZ development, is destined to continue traditions, laid in the International TRIZ Association by its First President G. S. Altshuller. TRIZ Master degree is conferred for research-related contribution to TRIZ development and for outstanding achievements in the field of practical application of TRIZ. TRIZ Master degree is conferred based on defended thesis or based on a set of research publications or contribution to practice in the field of TRIZ or related to TRIZ application.
2. The main goals of organizing level 5 (top level) certification in MATRIZ are:
 - development of TRIZ as an applied discipline, including the development of methodological grounds of TRIZ, tools for problem analysis and synthesis of inventive problem solutions, etc.;
 - promotion of activation of research activities in the field of TRIZ and social recognition of personal contribution of researchers in the development of TRIZ as an applied discipline and practical application of TRIZ;
 - broadening the scope of opportunities for practical use of TRIZ,
 - promotion of activation of practical use of TRIZ and social recognition of personal contribution of TRIZ practitioners.
3. All TRIZ Master diplomas, issued by the International TRIZ Association, give equal rights to their owners, irrespective of the date of diploma issuance.
4. Every candidate for TRIZ Master certification, by defense and on merits, must be certified on Level 4. A candidate may write an official letter to MATRIZ Presidium asking for applying for Level 5 certification as exclusion without having Level 4 certificate. It is necessary for the applicant to have scientific or practical publications in TRIZ (including abstracts of papers presented at the international conferences) related to the subject matter of the thesis (research work) to be defended or results of practical application of TRIZ. It is recommended for the defenses 2014 and 2015 that every candidate should have published at least one article in an indexed source on the thesis topic. This will be a mandatory requirement since 2016.

Note: "indexed source" means a journal or conference proceeding indexed by the databases of quality scientific publications: SCOPUS and/or Web of Science.
5. In order to pass level 5 certification, the applicants should prepare a thesis on TRIZ and defend it at MATRIZ Dissertation Council (DC) session, with the exception of cases when TRIZ Master degree is conferred based on a set of publications (article 24) and for outstanding achievements in the field of practical application of TRIZ (article 25).

Each applicant for the thesis defense should pass through a pre-defense procedure that involves only the applicant and the pre-defense committee members. The pre-defense may be in person event or via electronic means (Skype, WebEx, etc.). DC selects 2-3 prominent TRIZ experts that have experience in the particular area of thesis' topic. This committee performs a pre-defense and submits their recommendations to DC in a written form. Based

on the recommendations DC decides whether to allow or not the defense. Members of this group could be later selected as members of the DC.

Some of the pre-defense committee members may be L4 TRIZ experts (not mandatory TRIZ Masters only) specializing in the topic of dissertation, and experts from science/engineering domain.

6. The defense of dissertation papers (theses) is conducted only in the presence of the candidate not more often than twice a year. Dissertation Council sessions take place predominantly during one of the annual international TRIZ conferences as agreed upon with the organizers of the said conferences. In special cases (see articles 24 and 25), by the decision of the MATRIZ Dissertation Council, a presentation of a thesis can be made using electronic means of communication or TRIZ Master degree can be conferred without presentation.
7. The date and the venue of next session of Dissertation Council are appointed by MATRIZ Presidium no later than 4 months prior to the session.
8. The Chairman and Academic Secretary of the Dissertation Council are responsible for the composition of DC. The list of candidates to the members of the DC from 7 to 12 persons is formed (if possible, no later than a month prior to the session) out of TRIZ Masters, implying their presence at the session. Specifics of applicant's TRIZ activities is taken into consideration when selecting members of the Dissertation Council - this is done to ensure that only TRIZ Masters who are actively involved in practical improvement of products and technologies will take part in the evaluation of TRIZ practitioners' achievements. The final list of DC members is corrected and approved by MATRIZ Presidium during one week after submission of candidates to DC members.

After the list of DC members is approved by MATRIZ Presidium, the information about it is published on the MATRIZ web-site.

The Chairman of DC has the right of prompt substitution of DC members, who unexpectedly withdrew, for someone out of TRIZ Masters present at the DC session.

9. The Chairman of MATRIZ Dissertation Council is appointed by MATRIZ Presidium mostly out of Presidium members, for the period of activities of the elected Presidium (2 years). The Chairman of MATRIZ Dissertation Council directs its activities, works out the policy of functioning of MATRIZ Dissertation Council, conducts sessions of Dissertation Council or appoints the chairman from among the members of the Dissertation Council.
10. The Chairman of the Dissertation Council appoints the Academic Secretary of the Dissertation Council, whose functions include solving of organizational problems of the Dissertation Council functioning, conducting the documentation and other organization and information work associated with the preparation for conducting the level 5 certification (TRIZ Master).
11. Dissertation Council appoints opponent(s) (no more than two) of the analyzed thesis. The review of the opponent(s) should be prepared 2 weeks before the Dissertation Council session. Recommended structure of the opponent(s) review is quoted in Appendix 14.
12. No later than three months prior to the session of MATRIZ Dissertation Council, the applicant should send to MATRIZ (addressed to the President of MATRIZ and the Chairman of DC (a copy should be sent to the Academic secretary of DC) an application in Russian or in English. It should contain a letter addressed to the President of MATRIZ with a request to consider the application, contact information, second name, first name and

patronymic of the applicant, number of certificate of level 4 TRIZ specialist (or a copy of diploma of TRIZ methodologist signed by G. S. Altshuller), title of the thesis, name and contact information of thesis scientific/research supervisor (TRIZ Master), short abstract of the thesis (no less than 1000 symbols) and a picture of applicant.

If an applicant does not plan to defend a thesis and applies to TRIZ Master degree based on a set of publications or for outstanding achievements in the field of practical application of TRIZ, this must be indicated in his/her application. In this case an applicant's curriculum vitae must be submitted together with the application.

Candidates for the TRIZ Master degree based on a set of publications or for outstanding achievements in the field of practical application of TRIZ can be nominated by regional MATRIZ organizations. In this case, a regional MATRIZ organization must send an application with a curriculum vitae of nominated candidate and brief description of his/her achievements addressed to MATRIZ President and DC Chairman (with a copy to the Academic Secretary of DC). No later than during one month after submission of an application, MATRIZ Presidium collects written recommendations from TRIZ Masters. MATRIZ Presidium makes a decision regarding approval (in the case when at least seven recommendations from TRIZ Masters were received) or rejection of such application.

13. No later than one month prior to DC session, the applicant should send to MATRIZ Dissertation Council (addressed to the Chairman of the Dissertation Council and to the Academic Secretary) all information necessary for the analysis of the thesis: the thesis itself, author's abstract, review written by the research supervisor (it is acceptable to submit the review immediately prior to the DC session), and curriculum vitae of the applicant. All materials are prepared either in Russian or in English.

Author's abstract of the thesis is submitted both in Russian and in English. All DC members should have access to all materials of the applicant's thesis

All thesis materials (the thesis itself, abstract, and supervisor's review) have to be published on MATRIZ website within 10 days after their submission to the DC. Any individual TRIZ expert or regional TRIZ organization have rights to send their comments on the published thesis to the DC.

14. Main requirements to the thesis

Thesis on TRIZ is a methodological qualification work, in which, based on the research performed by the author, theoretical provisions have been developed, the set of which could be characterized as a new research achievement (e.g., a new direction of methodology development, which is identified and developed by the applicant; essential revision of traditional subject fields), or a significant research problem is solved, or substantiated solutions are rendered, the implementation of which contributes significantly to a certain field of engineering. References to the earlier works of the applicant are allowed only if they were published before the defense event.

TRIZ thesis should be written by the applicant alone, it should contain a set of new **scientific** results and assertions set forth by the author for public defense, it should be characterized by intrinsic unity and should be a manifestation of the personal contribution of the author.

The thesis should contain a systematized theory, a concept, embracing the subject field corresponding to the theme.

The thesis should meet the following criteria:

- novelty of research work (which could be obtained either as a result of studying another subject field, or by applying new methods and means of cognition to the subject field, which was researched before, or the study of new subject field using new technologies);

- significance of the topic of research;
- instrumentality and efficiency of proposed conclusions;
- presence of practical results;
- reproducibility of results in using proposed methods.

Quality of thesis preparation and presentation is also considered to be an important criterion for thesis defense.

15. The volume of Thesis – no less than 30 pages. The volume of dissertation abstract – no less than 5 pages. Dissertation abstract and the thesis are presented in soft form and in hard copies: Thesis - in the number of 7 copies (1 – to the Dissertation Council, 2 – to the opponents, 2 - to the Fund of materials of MATRIZ and to Fund of TRIZ materials of Tchelyabinsk District Universal People's Library (TDUPL), 1 copy to the scientific advisor and 1 copy to the applicant); dissertation abstract – no less than 18 copies (12 – to the members of Dissertation Council, 2 – to the opponents, 1– to scientific advisor, 2 – to the Fund of materials of MA TRIZ and to Fund of TRIZ materials of Tchelyabinsk District Universal People's Library (TDUPL), 1 – to the applicant).
16. Recommended structure of the thesis, dissertation abstract, review of the scientific advisor is quoted in Appendix 14. A monograph written by the applicant or a set of his/her scientific publications could be presented as a thesis.
17. Recommended procedure of work for the session of MATRIZ Dissertation Council:
 - 1.5 hours are planned for the presentation and discussion of each of the theses;
 - this time budget includes short introduction of scientific/research supervisor (5 minutes), the speech of the applicant (30 minutes), speeches of opponents (5 - 10 minutes each), questions to the applicant and his/her answers (30 minutes), concluding speech of the Chairman of the Dissertation Council (5 minutes);
 - Questions to the applicants could be asked first only by the present members of the MATRIZ Dissertation Council. If there are no questions from the Dissertation Council members, questions can be asked by other persons present at the thesis defense session within the overall time budget; Dissertation Council session is conducted by its Chairman or by the member of this council appointed by the Chairman.

The session of DC is open for any member of TRIZ community.

18. Decision concerning the thesis is taken based on secret ballot. No less than 7 (seven) members of the Dissertation Council must take part in the voting. The number of Dissertation Council members who took part in the voting is determined by Counting Committee based on the number of submitted voting ballots. The following number of "YES" votes is required to take a positive decision regarding the thesis presented by a degree-seeking candidate.

Number of DC members who took part in voting	Minimal number of "YES" votes required
12	8
10-11	7
9	6
7-8	5

Decision on conferral of TRIZ Master degree based on a set of publications (article 24) or for outstanding achievements in the field of practical application of TRIZ (article 25) is taken by a simple majority of votes of DC members.

Improperly filled voting ballot is considered as a "NO" vote.

DC members, who are scientific/research supervisors of candidates, don't take part in voting on those theses, in the preparation of which they participated.

To arrange for the organization of its work, DC appoints a counting committee from its members, which consists of three people (one is given the rights of the chairman).

Dissertation Council has the right to take decisions on the refinement of the time schedule and program of its work.

19. MATRIZ Presidium accepts the decision of Dissertation Council (having checked it for compliance with the provisions and regulations accepted in MATRIZ) and hands it over to MATRIZ President for approval, after which the Secretariat of MATRIZ President prepares and sends to new TRIZ Masters the diplomas, which are signed by MATRIZ President and Chairman of the Dissertation Council or Chairman of the Dissertation Council session. The signatures are verified by MATRIZ stamp.
20. Specialists certified for level 5 (top level) of TRIZ get the TRIZ Master diplomas drawn up on a specially prepared form of MATRIZ (Appendix 15). The ground for TRIZ Master degree conferral - either the development of TRIZ as a science or achievements in practical application of TRIZ - is indicated in the Diploma in addition to the name of new TRIZ Master.
21. Information on new TRIZ Masters is published at the MATRIZ web-site within a week after the defense of the thesis.
22. All disputable issues on the decisions of Dissertation Council are solved by MATRIZ Presidium and are approved by MATRIZ President.
23. The present provisions and alterations to them are accepted by MATRIZ Presidium and approved by MATRIZ President. Alterations made in the present Regulations have no retroactive effect and hence cannot be applied to decisions made before the date, on which amendments and alterations were made.
24. To apply to TRIZ Master degree based on a set of scientific publications, a candidate (or regional MATRIZ organization recommending this candidate) must submit the following materials to DC no later than a month prior to its next session:
 - certificate of level 4 TRIZ specialist;
 - list of published scientific articles on TRIZ (no less than 20 articles). If a candidate is an author of a published book or monograph on TRIZ, such a book (monograph) is considered to be an equivalent of five published articles. It is desirable that a candidate has published articles in indexed published sources;
 - list and abstracts of published patents of a candidate with indication of methodological aspects of TRIZ application;
 - list of TRIZ training seminars held by a candidate (each seminar should be no less than 40 hours long); and
 - recommendations from at least seven TRIZ Masters.

MATRIZ Dissertation Council makes a decision by a simple majority of votes.

TRIZ Master, who recommended a candidate, has the right to be a Dissertation Council member and take part in voting in respect of recommended candidate.

25. To apply to TRIZ Master degree for outstanding achievements in the field of practical application of TRIZ in the inventive or innovative activity, a candidate must submit the following materials to DC no later than a month prior to its next session:
 - certificate of level 4 TRIZ specialist;

- list and abstracts of published patents of a candidate (no less than ten patents);
- list of innovation projects, in the work on which the candidate was actively involved (no less than ten projects);
- several examples (2-3) of the most effective and efficient solutions worked out by the candidate (without violating confidentiality provisions);
- copies of articles and reviews on practical use of candidate's inventions, results of innovation projects, in which the candidate was actively involved (including implemented products and technologies, obtained economic effect, etc.);
- summary (4-5 pages) on methodological aspects of TRIZ application in the practical work of the candidate; and
- written recommendations from at least seven TRIZ Masters.

MATRIZ Dissertation Council makes a decision by a simple majority of votes.

TRIZ Master, who recommended a candidate, has the right to be a Dissertation Council member and take part in voting in respect of recommended candidate.

Appendix 14

Recommended structure and content of the thesis abstract

- *General characteristic of research.*
 - *Relevance of the topic of research.*
 - *Goals and tasks of research.*
 - *Scientific novelty of research.*
 - *Practical significance of research.*
 - *Main provisions to be discussed at the thesis defense.*
 - *Personal contribution of the applicant.*
 - *Implementation of the main provisions of research.*
 - *Publications.*
 - *Structure and volume of work.*
- Author's abstract of the thesis is prepared in Russian and in English.*

Recommended structure and content of the thesis

- *Introduction.*
 - *Relevance of the topic of research.*
 - *Goals of research.*
 - *Review of the known approaches to the analyzed problem.*
 - *Detailed statement of the problem.*
 - *Methods of solving the stated problem.*
 - *Results of performed research.*
 - *Practice of application.*
 - *Analysis of results of performed research.*
 - *Personal contribution of the applicant.*
 - *Conclusions and recommendations on application.*
 - *List of published works on the topic of the thesis.*
- The thesis is prepared in Russian and in English.*

Recommended structure and content of the adviser's review

- *Relevance.*
 - *Goals of research.*
 - *Main results.*
 - *Practical value of results.*
 - *Novelty.*
 - *Recommendation*
- The adviser's review is prepared in Russian and in English.*

Recommended structure and content of the opponent's review

- *Relevance of the work.*
- *Goals of research.*
- *Scientific significance of obtained results.*
- *Practical value of results.*
- *Implementation of the main provisions of research.*
- *Novelty.*
- *Structure of thesis*
- *Disadvantages of the work.*
- *Characteristics of presented work.*
- *Conclusion.*

The opponent's review is prepared in Russian or in English.

Appendix 15

A form of TRIZ Master diploma



The ground for TRIZ Master degree conferral - either the development of TRIZ as a science or achievements in practical application of TRIZ - is indicated in the Diploma in addition to the name of new TRIZ Master.