

Guideline for the Implementation of Virtual Training Courses in the SE-ZERT® Program

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Released by: Sven-Olaf Schulze on: 05/11/2022

Document: GfSE-ZD-025 Version: 01

*In the present text, male forms are partly used. Within the meaning of the Equal Treatment Act, these designations are to be regarded as non-gender specific.



Preamble

The training to become a "Certified Systems Engineer (GfSE)®" according to the regulations SE-ZERT® program offers the participants a solid background in the theory, the concepts, and processes of systems engineering according to international standards. It provides the necessary knowledge for the practical work of a systems engineer and provides ample opportunity for practical experience. After completion of the course and a successful examination, the participants receive the certificate "Certified Systems Engineer (GfSE)® Level B, Level C, or Level D" of the SE-ZERT® program. The SE-ZERT® program is represented by a group of designated SE-ZERT® assessors who form a committee within the independent and non-profit association Gesellschaft für Systems Engineering e.V. (GfSE).

The subject of this policy is only training. The exam and aspects of a virtual exam are treated separately.



Changes:

Wann	Was	Version:
05/11/2022	First edition	01



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1. Basics

- (1) Conventional training is the type of training that has been used so far.
- (2) The SE-ZERT® assessors support virtual trainings unreservedly. The form of training has proven itself.
- (3) For the future, the SE-ZERT® assessors assume the coexistence of conventional and virtual training.
- (4) There are still difficulties in understanding due to the novelty of the virtual approach. This guideline is intended to help understand the differences between conventional training and virtual training.
- (5) The SE-ZERT® assessors understand virtual training as a training course that does not come about through a common physical presence of all persons involved, but through a virtual presence by means of telecommunications.
- (6) A virtual training¹ in the desired sense is a training, in which all persons involved, simultaneously carry out the training in a virtual room.
- (7) Trainers and participants are the same in conventional and virtual trainings.
- (8) The conventional trainings are the reference.
- (9) Hybrid approaches in which only a part of the participants is present, but another part simultaneously participates virtually, should not be pursued.

2. Virtual Training

- (1) The goal of the SE-ZERT® assessors is that the participants in virtual training courses are offered exactly the same quality as in the equivalent conventional training course.
- (2) The virtual training is intended to create a "push" effect from the trainer to the participants. Therefore, a trainer is always necessary for the teaching of the material. Pure "pull" approaches (e.g. through exclusively downloadable teaching material) do not correspond to the spirit of SE-ZERT®.
- (3) The participants should also form a learning group in virtual space, i.e., in exchange with the trainer and with each other lead the dialogue.

3. Role of the Trainer

- (1) Also, the role of the trainer should be central and fundamental in virtual trainings.
- (2) The trainer should be aware of the difference between virtual and conventional trainings and carry out the training methodically accordingly.
- (3) The trainer should discuss the special features of the virtual training at the start of the course, in the sense of a "netiquette", with the participants (see also 4Role of the participant.
- (4) The trainer should monitor and demand compliance with the agreed cooperation rules.

4. Role of the participant

- (1) The participant should be aware of the specificity of a virtual training.

¹ Digital training and online training, unless otherwise defined, are used synonymously with "virtual training".

- (2) The participant should have a suitable infrastructure throughout the course, i.e., a quiet room with the possibility of sharing image and sound.

5. Infrastructure for Virtual Training

- (1) The infrastructure for virtual trainings should be at least analogous to that of conventional training (virtual seminar room, possibly virtual group rooms, virtual presentation area, etc.).
- (2) Standard IT programs (e.B. WEBEX, Zoom, MS-TEAMS) are suitable and can be used. This does not preclude the use of specialized training platforms.
- (3) When choosing the infrastructure, emphasis should be placed on modern interaction within the learning group. Special programs (SLIDO, etc.) are well suited for this.
- (4) The chosen infrastructure should be made known to the participants in good time before the start of the course.
- (5) The procedure in case of infrastructure failure should be explained at the beginning of the course (e.g., feedback or coordination via conventional channels such as telephone, mobile phone, etc.).

6. Presence of Trainers and Participants

- (1) Both trainers and participants should be virtually present at the same time during the course.
- (2) Trainers and participants of a course should be introduced to each other.
- (3) Audiovisual functions shall be used to support attendance.
- (4) Planned and unplanned absences must be communicated and documented².
- (5) Distributed presence in virtual groups should be coordinated. "Breakout rooms" are suitable for this purpose.

7. The Human Factor

- (1) Sufficient break times should be provided to relax from screen work.
- (2) Regardless of this, random, virtual encounters are to be made possible. For example, a "breakout room" is suitable as a coffee break area.
- (3) The trainer should be available on request for individual discussions with participants.

8. Course Material

- (1) Virtual trainings should include two types of course material that the trainer distributes to the participants before, during or after the training:
 - a. Handouts to the participants (pdf files of the slide shows or similar).
 - b. Transcripts of the exercises carried out in the training, jointly developed results and additions to the course material.
- (2) The trainer should point out the value of making own notes by the participants also in virtual trainings.

² Proof that the target training attendance has been achieved.

9. Prerequisite for Acceptance of the Training by the SE-ZERT® Assessors

- (1) The trainer should prove his competence in the handling and classification of virtual concepts.