Curriculum for

CPSA Certified Professional for Software Architecture®

– Advanced Level –

Module:
SOFT

Soft Skills for Architects

iSAQB®

International Software Architecture
Qualification Board

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Table of contents

0   Introduction: General information on the iSAQB Advanced Level

0.1   What does an Advanced Level Module teach?

- The iSAQB Advanced Level offers modular training in three areas of competence with flexible academic approaches. It considers individual leanings and focuses.
- The certification is achieved by writing a term paper. Experts designated by the iSAQB perform the assessment and administer the oral examination.

0.2   What capabilities do graduates of the Advanced Level (CPSA-A) acquire?

CPSA-A graduates are capable of the following:

- Independent and method-based design of medium- to large-scale IT systems.
- Responsibility for technology and content of IT systems of medium to high criticality.
- Development, design and documentation of measures for achieving non-functional requirements. Support of development teams in implementation of these measures.
- Control and implementation of architecture-related communication in medium to large development teams.

0.3   Requirements for CPSA-A certification

- Successful training and certification as a CPSA-F (Certified Professional for Software Architecture, Foundation Level)
- At least three years of full-time career experience in the IT sector, with participation in design and development of at least two different IT systems
    - o   Exceptions are possible on application (such as participation in open source projects)
- Training and advanced qualification within the framework of iSAQB Advanced Level courses comprising at least 70 credit points from all three different areas of competence (details in section 1.2).
    - o   Existing certifications can be accredited for these credit points on application. The list of current certificates accredited as credit points is available on the iSAQB website.
    - o   Other training and advanced qualifications can also be accredited on application to iSAQB if they are relevant for software architecture. This will be decided on an individual basis by the iSAQB Advanced Level working group.
- Successful completion of the CPSA-A certification examination.

1   Introduction to the "Soft Skills for Architects" module

1.1 Structure of the curriculum for Soft Skills for Architects, and the recommended time allocation

- Fundamentals of communication models and types (180 minutes)
- One-on-one and group discussions (330 minutes)
- Visualisation techniques (90 minutes)
- Moderation techniques (330 minutes)
- Fundamentals of conflict management (180 minutes)
- Reflection techniques (60 minutes).
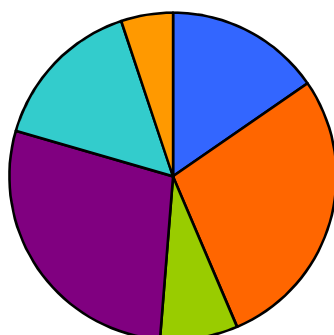
Fundamentals

Holding discussions

Visualisation techniques

Moderation techniques

Conflict management

Reflection techniques

1.2 Duration, didactics and other details

The times stated below are recommendations. The minimum duration of a course on soft skills for architects should be 3 days, but it can be longer. Providers can differ with respect to the duration, methodology, type and structure of the exercises as well as the detailed course outline. In particular, the curriculum leaves the type of examples and exercises completely open

In terms of accreditation for the subsequent Advanced Level exam, licenced courses on Soft Skills for Architects contribute the following credit points:

Methodical competence: 0 points
Technical competence: 0 points
Communicative competence: 30 points.

1.3 Prerequisites for the Soft Skills for Architects module

Prerequisites for trainers:

- At least 10 years professional experience in the IT sector and regular activity as a trainer in the Soft Skills field for the past 3 years (dual expertise).

Participants **should** have the following knowledge and/or experience:

- Software development is communication.
- Architects represent the IT side and support Requirements Engineers/Software Analysts in their role as intermediaries between the operations side and the IT side.
- Respecting people and communicating successfully with them are important skills for architects.

In addition, the following knowledge is **advantageous** for an understanding of some of the concepts covered:

- Knowledge of typical challenges when interacting with other people:
  - o   The other person "doesn't understand me".
  - o   There is a conflict.

- o People sometimes don't understand everything that architects are trying to explain to them.
- o Complicated issues are easier to understand with the aid of diagrams.
- o It's not easy to find solutions together.

1.4 Structuring of the module units based on learning objectives

The individual units of the curriculum are specified using the following structure:

- **Terms/concepts**: The key terms associated with this topic.
- **Lesson/practical exercise duration**: Defines the minimum time that must be allocated to the teaching and practical exercises for this topic in an accredited course.
- **Learning objectives**: Describe the content to be taught, including the associated key terms and concepts.

This section therefore also outlines the skills to be acquired in corresponding courses. The learning goals are differentiated in the following categories and sub-chapters:

- What should participants **be able to** do? Participants should be able to use this content independently after the course. This content is covered during the course by exercises and is part of the architecture documentation module examination and/or the final examination of the iSAQB Advanced Level.
- What should participants **understand**? This content can be tested in the architecture documentation module examination.
- What should participants **know**? This content (terms, concepts, methods, practices, etc.) can support understanding or motivate the subject. This content is not part of the examinations and will be mentioned in courses, but not necessarily taught in detail.
- **References:** References to secondary literature, standards or other sources. A detailed list of books and other sources is available on the iSAQB website under "Specialized sources".

1.5 Supplementary information, terms, translations

Architects need soft skills in their day-to-day work. They are continuously in contact with stakeholders, requirements engineers and development and quality assurance staff. They make design decisions based on information obtained from many different discussions, held with people with a wide range of interests. In this area of potential conflict, they must be able to identify the relevant important content for the decision to be made, and to present it in detail. Communication of their actual decisions in a clearly understandable manner is another challenge.

Human traits are often an obstacle to objective communication, with the result that misunderstandings and sensitivities can hinder the decision-making process and smooth cooperation, and that conflicts can easily develop.

This course specifically addresses the typical work situations of architects in this context as the "hub of the wheel", and provides pragmatic tools for enriching one's own set of soft skills and appropriately constructively coping with the challenges of an architect.

The material learnt in the "Soft Skills for Architects" module is not covered by the iSAQB CPSA-A examination. It is, however, expected that the examinees use their soft skills to present and discuss their solution to the examination task in an understandable manner.

Where necessary for an understanding of the curriculum, we have included specialist terms in the iSAQB Glossary, and have defined them there and where necessary have supplemented the definitions by translations of the original literature.

2   Introduction to the iSAQB certification program

Duration: 15 min (optional)	Practice time: none

This section is not relevant for the examination. This section can be omitted if participants are already CPSA-F certified.

2.1 Terms and concepts

iSAQB, Advanced Level certification and prerequisites for the same.

2.2 Learning objectives

Participants become familiar with the iSAQB certification program and the corresponding examinations and examination procedures.

2.2.1   What should participants know?

- iSAQB as an association
- Advanced Level as opposed to other levels
- Constraints and procedures of the iSAQB certification program.

3 Introduction to communication models and types

Duration: 120 minutes	Practical exercises: 60 minutes

3.1 Terms and concepts

Definitions, Freud's iceberg model, Schulz von Thun's 4 aspects of a message, Mayrshofer/Kröger's perception, assumption and judgement.

3.2 Learning objectives

3.2.1 What should the participants be able to do?

- The participants are familiar with different communication models and types.
- Participants can assess in which typologies they and their dialogue partner find themselves. During this process, they consider that typologies can also lead to stereotyped thinking and should therefore be used with care
- Participants can adapt their communication to the respective needs of others.

3.2.2 What should the participants understand?

- Other people are not the same as me.
- Knowing the other person's communication type can be useful when communicating with them.
- Content is the least important aspect when speaking.
- People don't (only) act rationally, and that's OK!
- Models are too simple, but are nonetheless useful.
- My inner disposition affects the communication.
- It's wrong to believe that only one person can be right.
- Resource-oriented versus deficient communication.

3.3 What should the participants know?

- Their own assumptions of how communication works
- Situations in which communication was successful and situations in which it was unsuccessful
- Their own strengths and weaknesses in specific communication situations
- Knowledge of how they wish to improve their own skills.

3.4 References

- Vigenschow, Uwe; Björn Schneider; Ines Meyrose: Soft Skills für Softwareentwickler: Fragetechniken, Konfliktmanagement, Kommunikationstypen und -modelle
- Schulz von Thun, Friedemann: Miteinander reden 1, Störungen und Klärungen, Allgemeine Psychologie der Kommunikation
- Schulz von Thun, Friedemann: Miteinander reden 2, Stile, Werte und Persönlichkeitsentwicklung; Differentielle Psychologie der Kommunikation
- Schulz von Thun, Friedemann: Miteinander reden 3, Das "Innere Team" und situationsgerechte Kommunikation

4 One-on-one and group discussions

Duration: 120 minutes	Practical exercises: 210 minutes

4.1 Terms and concepts

Active listening, providing feedback, one-on-one discussions, group discussions, preparation of discussions, follow-up activities, the course of a discussion, discussion settings.

4.2 Learning objectives

4.2.1 What should the participants be able to do?

- The participants can evaluate one-on-one and group discussions and presentations based on different communication models.
- Participants can independently prepare one-on-one and group discussions in a structured manner.
- Participants can conduct one-on-one and group discussions.
- Participants can carry out the necessary follow-up activities for one-on-one and group discussions.
- The participants have learnt methods for conducting discussions (actively listening, asking questions / follow-up questions, summarising) and how to apply them.

4.2.2 What should the participants understand?

- The participants understand the importance and effectiveness of well-planned preparation of discussions.
- The participants understand the structure of the course of a discussion and prepare themselves for it.
- The participants understand the importance of following up discussions.
- The participants can recognise a divergence between the subject level and the process level.
- The participants understand that intensive preparation of a discussion enables them to adapt to current developments and unforeseen changes, and that they can trust their inner freedom and skills.

4.2.3 What should the participants know?

- Situations in which the participants conduct one-on-one or group discussions
- Different presentation methods, depending on the respective situation.

4.3 References

- Gernot Graeßner: Moderationstechniken
- Mayrshofer, Daniela; Kröger Hubertus A.: Prozesskompetenz in der Projektarbeit

5 Visualisation techniques

Duration: 30 minutes	Practical exercises: 60 minutes

5.1 Terms and concepts

Visualisation techniques, importance of visualisation, advantages and disadvantages of different visualisation media (metaplan board, whiteboard, flipchart, slides, PowerPoint, tools).

5.2 Learning objectives

5.2.1 What should the participants be able to do?

- The participants have gained an impression of how they can use visualisation techniques for reaching a consensus and for joint development of results.
- The participants should feel motivated to stand up, go to the front and visualise or draw what they're thinking.

5.2.2 What should the participants understand?

- Visualisation can also be used to reach a consensus.
- Visualisation increases transparency and a common understanding.
- Visualisation supports clarification processes.
- Visualisation is a linking topic.
- There's a difference between visualisation for moderation purposes and someone else visualising their own ideas.

5.2.3 What should the participants know?

- How to use whiteboards, flipcharts and metaplan boards and cards
- What is used where in practice
- When visualisation makes sense.

5.3 References

- Rachow, Axel: Sichtbar, Die besten Visualisierungs-Tipps für Präsentation und Training
- Graeßner, G.: Moderation – das Lehrbuch
- Mayrshofer, Daniela; Kröger Hubertus A.: Prozesskompetenz in der Projektarbeit

6 Moderation techniques

Duration: 120 minutes	Practical exercises: 210 minutes

6.1 Terms and concepts

Definitions, the role of the moderator, different moderation techniques, stages in decision-making.

6.2 Learning objectives

6.2.1 What should the participants be able to do?

- The participants can define their role in accordance with the requirements of the specific group situation, between the extremes of "Moderator" (process level) and "Decision maker" (functional level), and can make it transparent in the group.
- To support decision making they can use methods and techniques for the preparation and conduct of group situations and for discussions in groups.
- They can bring about architecture decisions in the group.
- They can provide inputs appropriate to the group's needs, to support the solution process.

6.2.2 What should the participants understand?

- The demands that the role of a moderator places on the architect.
- The difference between the role of the moderator (supporting a solution process with no specific interest in the nature of the resulting solution) and the role of the decision maker/architect (with a specific interest in the resulting solution).
- Which aspects of the moderator role help the architect to in future achieve viable and constructive solutions.
- That in addition to technical aspects, architecture involves a significant level of moderation dexterity to enable smooth interaction with one another.

6.2.3 What should the participants know?

- Experience with moderation situations
- Further literature.

6.3 References

- Rachow, Axel: Sichtbar, Die besten Visualisierungs-Tipps für Präsentation und Training
- Graeßner, G.: Moderation – das Lehrbuch
- Mayrshofer, Daniela; Kröger Hubertus A.: Prozesskompetenz in der Projektarbeit

7 Introduction to conflict management

Duration: 120 minutes	Practical exercises: 60 minutes

7.1 Terms and concepts

Definitions, types of conflicts, conflict analysis, Glasl's conflict stages.

7.2 Learning objectives

7.2.1 What should the participants be able to do?

- The participants can carry out a conflict analysis appropriate to the situation, to ensure a continued ability to act and work.
- In a conflict situation, the participants can recognise whether they can resolve the conflict on their own authority.
- The participants find both their own de-escalation channels and delegation options and escalation channels.

7.2.2 What should the participants understand?

- Different types of conflict require different approaches for their resolution.
- Conflict analyses assist in differentiating between practical and impractical solution approaches.
- Constructive conflict solutions contribute to growth and learning.
- Only under certain conditions can conflicts can be resolved on one's own authority.
- The participants are not responsible for providing the solution for a conflict.

7.2.3 What should the participants know?

- The most important conflict situations in the context of software architecture work, and the involved parties (e. g., Specialist Department / Development, Development/Operations, Development/Support, etc.)
- Glasl's stages of conflicts
- Conflict resolution options on one's own authority
- Delegation options and escalation channels.

7.3 References

- Glasl, Friedrich: Konfliktfähigkeit statt Streitlust oder Konfliktscheu
- Vigenschow, Uwe; Björn Schneider; Ines Meyrose: Soft Skills für Softwareentwickler: Fragetechniken, Konfliktmanagement, Kommunikationstypen und -modelle

8   Reflection techniques

Duration: 20 minutes	Practical exercises: 40 minutes

8.1   Terms and concepts

Definitions, active listening, providing feedback, reflection tools

8.2   Learning objectives

8.2.1   What should the participants be able to do?

- Via regular reflection, the participants achieve clarity in respect of their own perception of themselves and how other people perceive them.
- The participants know how to reflect.
- The participants know how to request feedback from others.
- The participants know how to provide constructive feedback.

8.2.2   What should the participants understand?

- Feedback contributes to the learning process.
- Regular feedback promotes constructive collaboration and thus also contributes to sustainable work results.
- Reflection techniques.
- Rules for providing and accepting feedback.

8.2.3   What should the participants know?

- The need for reflection.
- Situations in which the participants have themselves received or provided feedback.

8.3 References

9 Examples of soft skills for architects

Section 9 should be read and understood in the context of the content of Sections 3 – 8.

9.1 Terms and concepts

Within each licenced training course, at least 3 examples of group discussions and conflict analysis from the context of the participants must be addressed.

The nature and characteristics of additional examples presented can vary depending on the training and/or the interests of the participants, and are not specified by the iSAQB.

9.2 Learning objectives

A description of what the participants should learn about conducting group discussions and conflict analysis when they use their examples.

9.2.1 What should the participants be able to do?

- The participants can translate and apply the content of the training course to their own context.

9.2.2 What should the participants understand?

- The techniques and tools presented in the seminar can be translated and applied to the participants' own context.

9.2.3 What should the participants know?

- The participants gain new knowledge about the individual challenges in the context of their own work, and are inspired to face up to them and find solutions.

9.3 References

None. Training providers are responsible for the selection and description of examples.

10   Sources and references on soft skills for architects

This section contains references that are referred to in whole or in part in the curriculum.

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