

Appendix D

Paper D: Instrument

Before we start

- Talk about purpose, confidentiality, transcription, anonymization, and so on.

Consent

- Q1: Do you have any questions before we start?

About the Interviewee

- Q4: Discussion of work situation (i) Education? At company for N years? Worked with SE M years? (ii) Role? Daily tasks? Responsibilities? (iii) Team?
- Q6: Which other roles/other persons do you cooperate with most during your daily work? How?

Process, Decisions

- Q7: Do you follow an overall process model? (i) Such as kanban, scrum, v-model, waterfall, ...
- Q8: What are the overall phases/steps in your process? (i) Meetings/Rituals? (ii) Protocols/Artifacts?

- Q9: When in the process is testing performed? (i) Gates in the process? (ii) Certain types of testing only performed in certain points? (iii) How are the results used?

System under Test, Test Environment, and Feedback Loop

- Q10: Tell me about your current (or latest) system under test? (i) Hardware, software? (ii) What other systems does it communicate with? (iii) Test environment, test framework? (iv) Do you use several test systems?
- Q11: How are test cases executed?
- Q12: Tell me about how code changes in the system under test reaches the test environment? (i) Anything needed before code check-in? (ii) What are the steps and duration required to go from code change to test result? (iii) How do the test results reach developers? (iv) How can you tell that the code change was OK?
- Q13: What are your feelings about the system under test, test environment and the steps needed from code change to result?

Testing and Test Results

- Q14: What is a typical test case? (i) How is it specified? (ii) What is needed to run the test? (iii) How long does it take to execute it? (iv) Who decides when a new test case should be implemented? Why? Is this the same person that wants the results from the testing?
- Q15: How often are test cases executed? Do you have some strategy when selecting test cases for execution? (i) How many test results are generated here? (ii) How do you keep track of it? (iii) Long-term storage of results? (iv) Do you ever miss any of it?
- Q15.5: Do you ever get the feeling that there is too much information to handle the reporting?
- Q16: How is reporting done? (i) Do you report results from one test case at the time? How? (ii) With whom do you communicate about these results? How? (iii) How does this help you fulfill your responsibilities? (iv) Would you benefit from more/other types of reports? Which ones?

(v) Do your reports follow templates or standards? Which ones?¹ (vi) Is the reporting supported with tools? Which ones?

- Q16.5: Do you have different types of test reports?
- Q17: What happens when a test fails? (i) How do you determine the root cause? Do you help with this process?
- Q18: How do you separate software failures from other issues? (i) For example issues with test cases, the test framework, the test environment, hardware in the test system or issues with test reporting?
- Q18.5: Can we have an example of a test report, or a template?
- Q18.7: How important are your challenges with test results communication when compared to other challenges in testing?
- Q19: What are your feelings about how you handle and report on test results?

Visualizations and Summaries

- Q20: Do you create or look at visual representations or summaries of test results? (i) What do they show or tell you? (ii) What are they? Plots? Animations? Links? PDF documents? Can you explain some examples? May we use in a publication (when properly anonymized)? (iii) Do you think they are easy to understand? (iv) In addition to looking at them: can you interact with them? (v) Which of these visualizations or summaries are the most useful? Why?
- Q21: What types of visualizations or summaries have you tried in the past? (i) How come you no longer look at these?
- Q22: How does visualization or summaries help you fulfill your duties?
- Q23: What do you wish you had visualized or summarized?
- Q24: In your previous experiences (other organizations, projects, ...), what are your views on meaningful visualizations or summaries?
- Q25: What are your feelings about on these visualizations or summaries?

¹Some common ones are IEEE 829 Standard for Software and System Test Documentation, ISO/IEC/IEEE 29119 Software Testing, Part 3: Test Documentation, or BS 7925-2 Standard for Software Component Testing.

Challenges

- Q26: So there are a number of stakeholders and methods for test results communication. . . (i) What stakeholders understand you and your needs the best? Why? (ii) Any stakeholder that does not understand you or your needs? Why? (iii) When are there misunderstandings? Why?
- Q27: What other challenges in test results communication have you encountered?
- Q28: Are there situations where you feel that your existing test results communication process is too slow or even a bottleneck in your progress? (i) What do you do to overcome such situations?

Wrap-up

- Q35: Thank you very much – your answers are valuable to us.
- Q36: We will transcribe this interview into text – would you like to read and comment on the transcribed text? (i) How would you like this communication? Email? Private mail? Physical mail?
- Q38: Can you recommend other persons in your organization who would be interested in participating in this study (perhaps after we stop the audio)?
- Q39: Anything else that you would like to add?
- Q40: Let's double check that you have the contact details.