Info about the exercises in requirements elicitation

This document outlines the planned exercises in elicitation and documentation of requirements. Exercise 5 will prepare the role play and Exercise 6 (a: interview, b: requirements workshop, c: report) will then perform and reflect upon the requirements elicitation and documentation activities.

1. Motivation

Exercises and exams in courses dealing with modelling and requirements specification tend to be based on given case descriptions. The task then becomes to translate a somewhat messy description in natural language to a more structured one (models, requirements), plus possibly make “own assumptions” where information is lacking. Such assignments are fairly easy to conduct both for students and staff, but unfortunately not very realistic:

- When eliciting requirements in real projects, you seldom get all the information you need up front.
- Neither is it usual that all the information is available in written form. In much RE work, oral communication is as important as written communication.
- Moreover, you cannot simply make “own assumptions” when information is lacking or imprecise.

In large IS projects domain knowledge, understanding of the problem and requirements for solutions must be gathered from various stakeholders, using several different techniques, and documented requirements must be discussed and negotiated.

Some of you have had some practical training eliciting requirements in TDT4290 Customer Driven Project. But often, only 1-2 students in a group of 6-7 have the role of customer contact. Moreover, the requirements elicitation sessions are not in themselves a particular topic of evaluation or reflection in that course, as the focus both in lectures, instruction and grading is on the written report. Hence, it can be interesting to try something different in TDT4250, focussing specifically on oral techniques for requirements elicitation and let these be a topic of evaluation and discussion (but not grading).

It is not realistic to find a sufficient number of external “customers” who would be willing to be interviewed about problems and requirements for new IS solutions in their organizations. (True, in the Customer Driven project, there are customers, but these have the possible bonus of receiving useful software in the end.) Hence some kind of role-play must be used to practice these RE techniques. Being only 3 persons in the staff for this course, we cannot play customer to all the students, so our suggestion is that you (students) alternate playing roles as customer and requirements engineer. Of course, one can ask whether it is useful to interview a “customer” (who is really a fellow student) about a made up problem in a made up organization and elicit requirements for a system which will never be developed. We believe that this may indeed have some pedagogical value. In courses in emergency first aid, students will use dolls – or each other – to practice life rescue techniques. This of course eliminates many complications that might be present in a real situation (e.g., bleeding, vomit, facial injuries, difficult weather conditions, chaotic surroundings, stress and anxiety, …) Still, if a real accident later occurs, a person who has done practical training with these techniques is more likely to do well than a person who has only read about the techniques – for instance because the practical training gives the person more confidence in how to go about doing something. Something similar can apply to requirements elicitation. The next time you
interview somebody, it might be serious business (and it is definitely serious business the next time you are interviewed) – therefore you should take this opportunity to practice, so that you are well prepared for reality.

2. What shall be done and how?

The following must be done:

1. Form groups
2. Prepare the customer roles
3. Perform interviews (1:1, with passive observers)
4. Perform requirements workshops
5. Write report

The elicitation activities are items 3 and 4. The reason why we have chosen these two particular techniques, is that they are commonly used in the workplace, and moreover quite different from what you have learnt in other exercises / other courses (while gathering information from written sources – also a common technique – would be more similar to what you have done previously).

2.1 Forming groups

You can start forming groups immediately – notify the assistants as soon as your group is decided. You can choose for yourselves who you want to group with. We suggest a standard group size of 4. Different sizes can be discussed if needed, but it is important that we are able to match groups with the same sizes (for 1:1 interview role play).

2.2 Preparing the customer role

The most challenging task may actually not be to play the role of requirements engineer, but to play the role of customer, where you have to appear trustworthy even if the problem is made up. Therefore, you get significant time for preparing this act. This part of the job is a separate exercise (Exercise 5) and takes place over two weeks: First you deliver a draft customer description to the assistants by Thursday 19.2. After receiving comments, you then improve your description and deliver the final version by Thursday 26.2. On the following day, the core elicitation exercises will begin.

2.3 Interviews

Interviews (1:1) are planned to be held on Friday 27.2. and Monday 1.3., in the standard time slots of the course (dvs Fr 14-16, Mo 12-14, in both cases starting at :00, not at :15 past). The groups who play customer on the Friday will be requirements engineers on the Monday, and vice versa. If special conditions make it difficult for someone to use these times, it is possible to change to other times – on the following conditions:

• All the involved students agree (both the interviewer, the interviewee and the observers)
• You find a suitable location for the interview(s), e.g. by reserving a room
• You notify the assistants of the change (with the new time and place) well before the session is to take place.

We envision 4 interviews à 30 min. (assumed group size 4) = 2 hours. In the customer group, the 3 persons who are not being interviewed shall quietly observe the interview and take notes to evaluate the interviewers performance. The 3 spare persons in the requirements engineer group shall on the other hand not be present (since having observed other interviews before you do your own would give you unrealistic pre-knowledge)
The interviewer must take notes during the interview. When a group has done all its 4 interviews, it must come together and start synthesizing the interview results into a draft requirements specification. Requirements should be documented by means of the technique VORD as presented in the course readings. It is not compulsory to use the full repertoire of representational forms in VORD, you only need to apply those that you find appropriate.

2.4 Requirements Workshop

The requirements workshops are planned to be held Friday 5.3. and Monday 8.3. Each workshop is assumed to last for 2 full hours. The group who is customer on the Friday will be requirements engineers on the Monday and vice versa. In the workshop, the entire 2 groups (4 + 4 persons) will be present during the sessions. However, there are only two analyst roles: facilitator and scribe. The two spare persons from the requirements engineer group will thus function as observers, noting down remarks on the facilitators performance. You then change roles every half hour, so that all the 4 group members have a go as facilitator and scribe.

In the requirements workshop, the starting point will be the draft requirements specification that the analyst group made after the interviews. The workshop will then try to unite the various viewpoints from the individual interviews, solve conflicts and agree on the prioritization of requirements, as well as adding new requirements where the specification is found to be vague or incomplete.

Again, it is possible to perform the activities at other times than scheduled, with the same extra conditions as given for the interviews.

2.5 Report

After the requirements workshop each group will write a report based on the elicitation sessions for which they were requirements engineers. This report shall contain the following:

- The product, i.e. the requirements specification arrived at. This spec shall only contain requirements mandated from the interaction with the customers and the notes taken from those sessions – you shall not make own assumptions and add extra requirements beyond this, even if you see that the spec is incomplete. You will not as such be punished for an incomplete specification.
- An evaluation of the requirements specification, based on theory from the course readings. E.g., you can use the quality framework, Pohl’s framework, or Davis’ list of wanted properties for a good requirements specification – or even all these three. In this evaluation, you of course point to observed weaknesses in your spec (rather than fixing these by “own assumptions”).
- An evaluation of the process: How effective were the interviews? How effective was the workshop? Was the elicitation techniques performed in a good manner? What mistakes were possibly made, and what can you learn from this for the future? Here, you shall also include a brief individual self-assessment of each person’s performance as interviewer and facilitator – based on the comments from the observers. I.e., how did person A, B, C, D solve the task of interviewer and facilitator? Note: you will not be punished in the scored points for admitting a poor performance – the important thing is to know that it was poor and have ideas about how to improve.

The report is due 2.4. (you are also allowed to deliver it earlier, if you like). The maximum points for the report is 30 per student. Half of these points will be given automatically, as long as the student has participated in the planned oral activities. The remaining half of the points will be given in a gradual manner, based on the quality of the report. In total, there are then max 50 points to be gained from the group activities (20 for the customer preparation, 30 for the requirements elicitation activities and following report).