Process Engineering 623.252 - Winter Term 2022

Assignment 1
BPMN – Collaboration diagram, Choreography diagram
(10 points)

The following paragraphs describe a process involving several participants: employees from different departments of Stark industries, a customer, a third party supplier, a printing press, and an express courier. Read the process description carefully and complete the tasks.

Stark industries is a company offering custom IT equipment to businesses. When customers need some IT equipment, they contact the sales department of Stark industries expressing their interest. The sales department first asks the customer some basic information (name, contact details, IT equipment they need, expected number of users, description of their current assets, …). This information is provided by the customer through a Solution Description (SD) form. The customer fills in the SD form and sends it to the sales department of Stark.

After receiving a completed SD, the sales department forwards it to a technician from the technical department for evaluation. The technician adds a technical solution proposal to the SD, and sends it to the head of the technical department for approval. The head of the technical department can either approve the solution or send it back to the technician for corrections. When finally the head of the technical department approves the solution in the SD, he/she sends it to the sales department, along with an estimate of the overall cost. The sales department calculates the final price, adds it to the SD and forwards it to the customer. If the customer is not satisfied with the offer, he/she declines it; otherwise, he/she communicates the acceptance of the offer to the sales department. A copy of the accepted SD is stored in the sales database.

When an offer is accepted, the sales department informs the head of the technical department for the development of the solution. If the solution requires additional components from a third party supplier, the head of the technical department sends a request to the supplier; otherwise, he/she just forwards the information to a technician, who develops the solution. Components from third party are received directly by the technician developing the solution: in this case, the development begins only after receiving the components. During the development phase, the technician may also write, if included in the offer, a technical manual, which is sent to a printing press (it is a company external to Stark) for typesetting and printing of the manual. The printed manuals are shipped to the technician.

At the end of the development phase, the technician informs the head of the technical department, who in turn informs the sales department to notify the client and sends him/her an invoice. At the same time, an express courier is used to deliver the developed solution (including

the manuals, if part of the offer) to the customer. After having received the developed solution and the invoice, the customer sends the payment to the sales department.

Task: form a group of max. 3 people and solve the following tasks:

1. Design a BPMN Collaboration Diagram for the process described above. Use the core and extended elements of BPMN 2.0. Make sure to include all participants into the diagram and do not forget to model the data flow. *(7 points)*
2. Design a BPMN Choreography Diagram for the process described above. Be sure to include all participants and forms into the diagram. *(3 points)*

If you find discrepancies in this description, please state the problem and your assumptions for a satisfying solution (with annotations). In any case, please state clearly any assumption you made!

Note that each group member must contribute actively in solving the tasks, and it is assumed that each group member will be able to present the final solution in its entirety.

Software: use Camunda Modeler for modeling the Collaboration Diagram. You can download it for free at the following link: https://camunda.com/download/modeler/. For the Choreography Diagram, you may use Visual Paradigm, which you can download from here: https://ap.visualparadigm.com/aauniversity-of-klagenfurt

Upload: please upload your solution to Moodle as a .zip file including:

1. The .bpmn file of the Collaboration Diagram generated with Camunda Modeler.
2. A single .pdf file including the Collaboration Diagram (you can export it as a .png image from Camunda Modeler with File > Export As Image), any assumptions you made in the modeling phase, and an image of the Choreography Diagram.

Provide a single upload per group, but do not forget to include the names of all group members in the .pdf file you are submitting!

Evaluation: your solution will be evaluated considering completeness and understandability of the model, correctness of the usage of BPMN, and soundness of the assumptions you made.