

**Actor**

**Activity**

**Activity Data**

**Gateway**

**Condition Specification**

**Further Specification**

## **Text 1: Process Description 1-1: Bicycle manufacturing.**

A small company manufactures customized bicycles. Whenever **the sales department** receives **an order**, a new process instance is created. A member of the sales department can then **reject or accept the order** for a customized bike. In the former case, the process instance is finished. In the latter case, **the storehouse** and **the engineering department** are **informed**. The storehouse immediately **processes the part list of the order** and **checks the required quantity of each part**. If the part is available in-house, **it is reserved**. If it is not available, **it is back-ordered**. This procedure is repeated for each item on the part list. **In the meantime**, **the engineering department prepares everything** for the assembling of the ordered bicycle. If the storehouse has successfully **reserved or back-ordered every item of the part list** and the preparation activity has finished, **the engineering department assembles the bicycle**. Afterwards, **the sales department ships the bicycle to the customer** and finishes the process instance.

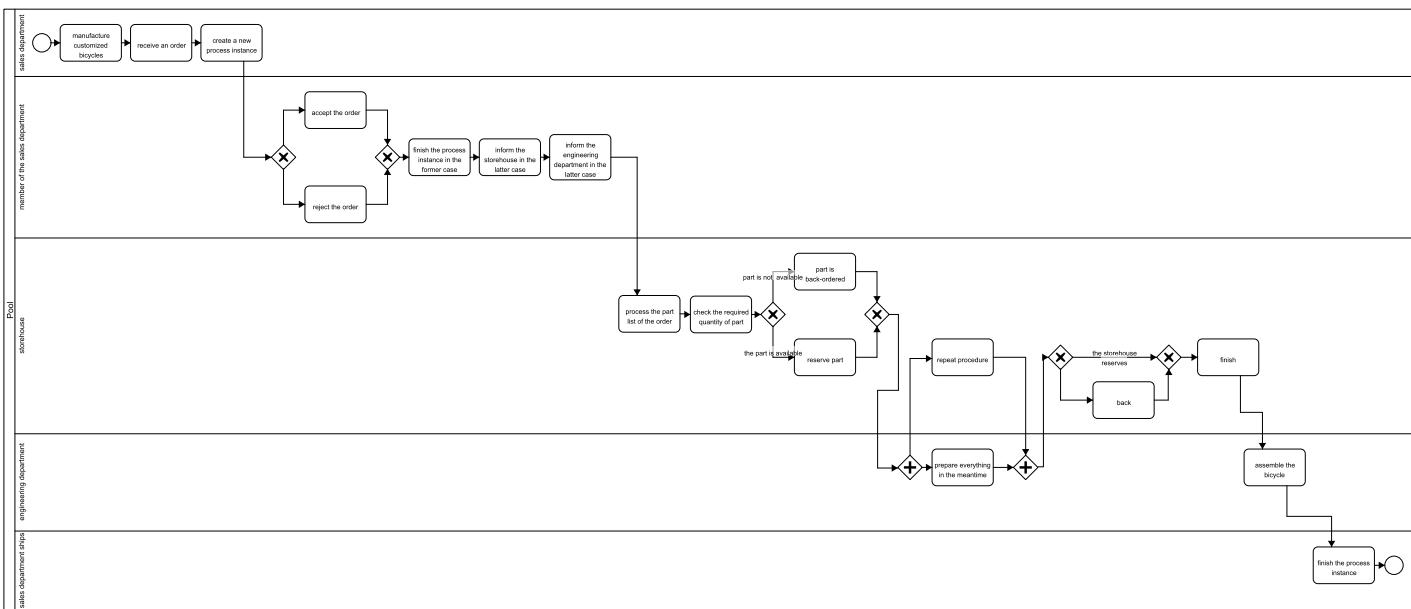


Figure B.21: Model 1-1 as generated by our system.

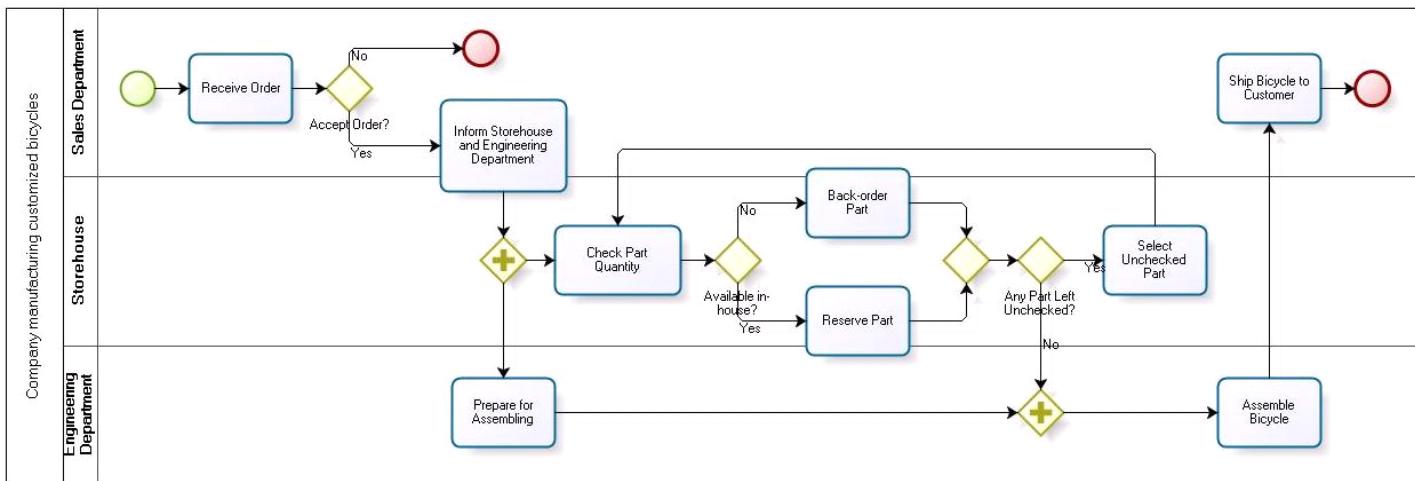


Figure B.22: Model 1-1 as created by a human modeler.

## **Text 2: Process Description 1-2: Computer repair.**

A customer brings in a defective computer and the CRS checks the defect and hands out a repair cost calculation back. If the customer decides that the costs are acceptable, the process continues, otherwise she takes her computer home unrepairs. The ongoing repair consists of two activities, which are executed, in an arbitrary order. The first activity is to check and repair the hardware, whereas the second activity checks and configures the software. After each of these activities, the proper system functionality is tested. If an error is detected another arbitrary repair activity is executed, otherwise the repair is finished.

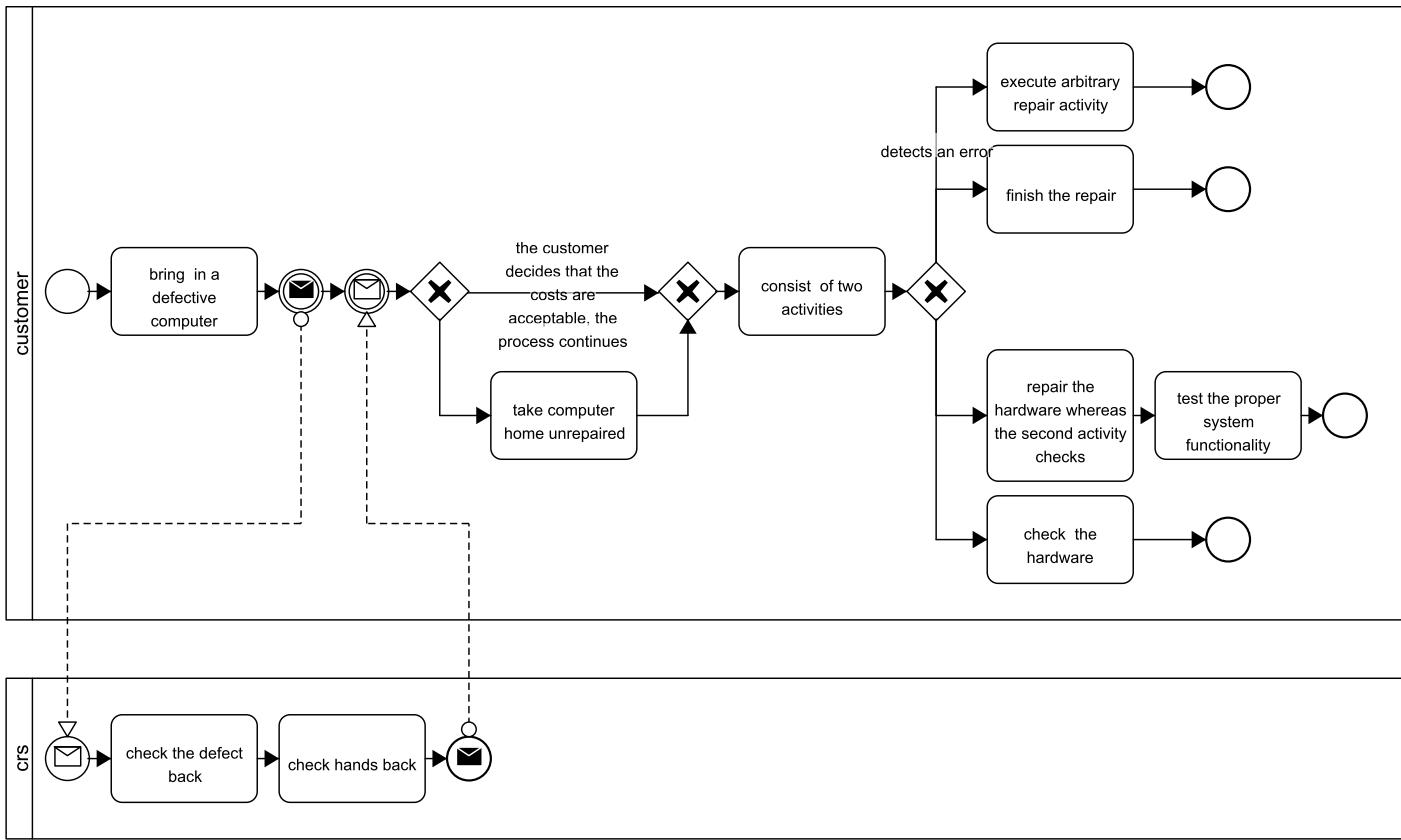


Figure B.23: Model 1-2 as generated by our system.

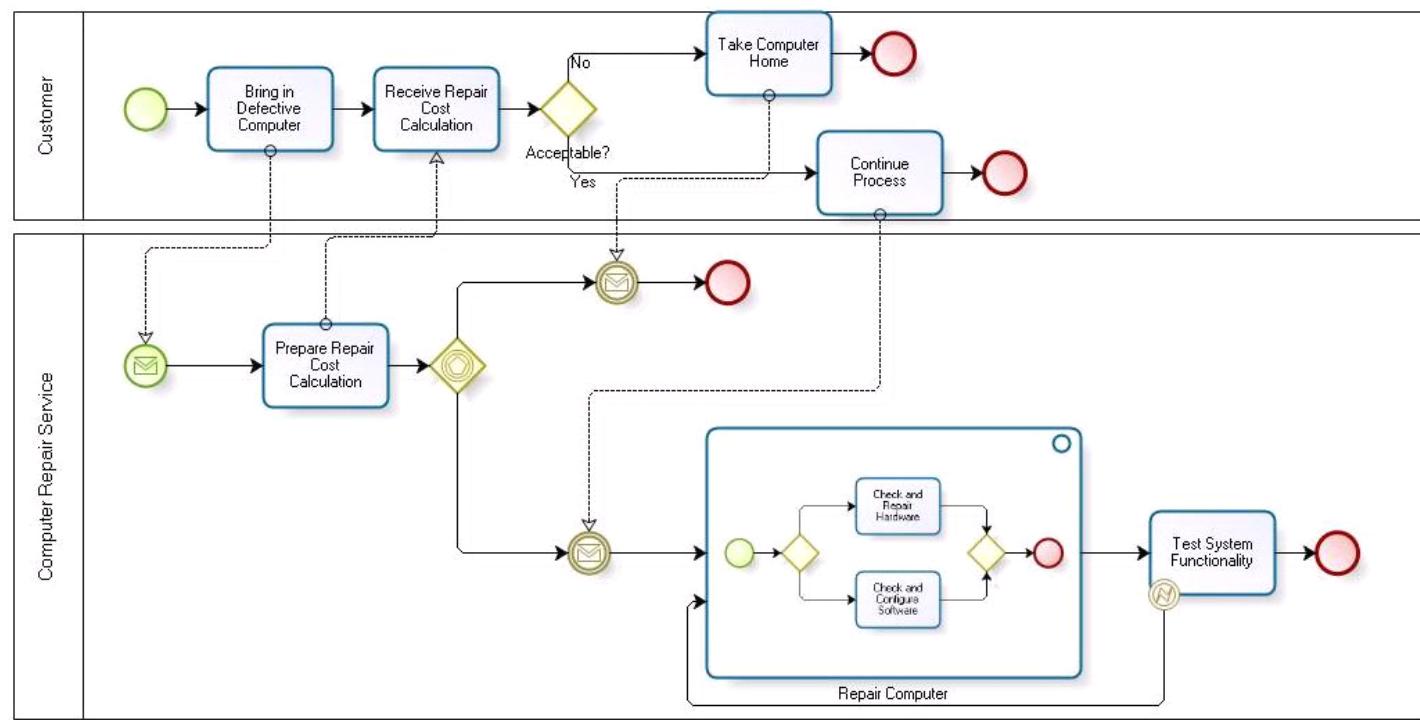


Figure B.24: Model 1-2 as created by a human modeler.

### **Text 3: Process Description 1-3: Hotel Service.**

The Evanstonian is an upscale independent hotel. When a guest calls room service at The Evanstonian, the room-service manager takes down the order. She then submits an order ticket to the kitchen to begin preparing the food. She also gives an order to the sommelier (i.e., the wine waiter) to fetch wine from the cellar and to prepare any other alcoholic beverages. Eighty percent of room-service orders include wine or some other alcoholic beverage. Finally, she assigns the order to the waiter. While the kitchen and the sommelier are doing their tasks, the waiter readies a cart (i.e., puts a tablecloth on the cart and gathers silverware). The waiter is also responsible for nonalcoholic drinks. Once the food, wine, and cart are ready, the waiter delivers it to the guest's room. After returning to the room-service station, the waiter debits the guest's account. The waiter may wait to do the billing if he has another order to prepare or deliver.

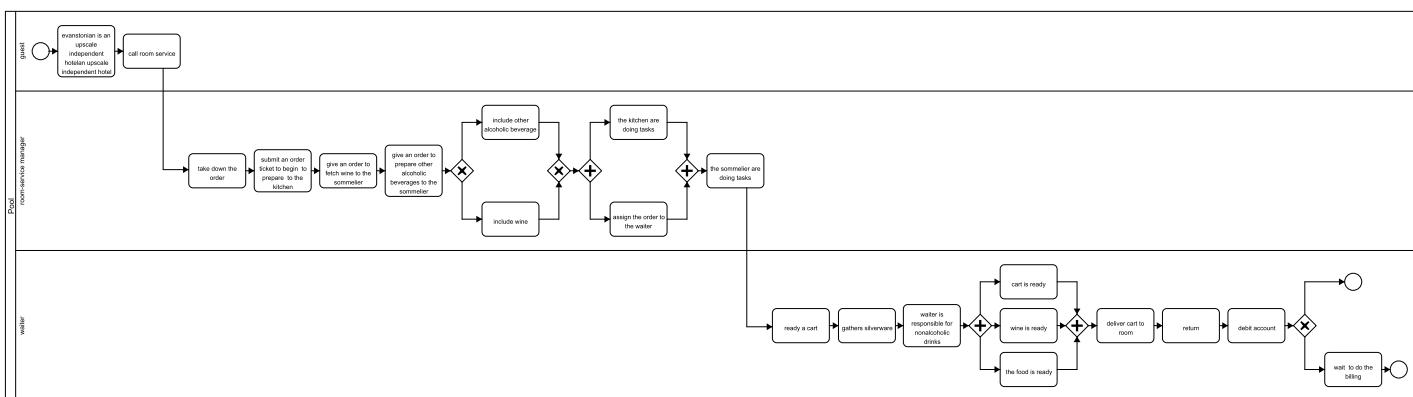


Figure B.25: Model 1-3 as generated by our system.

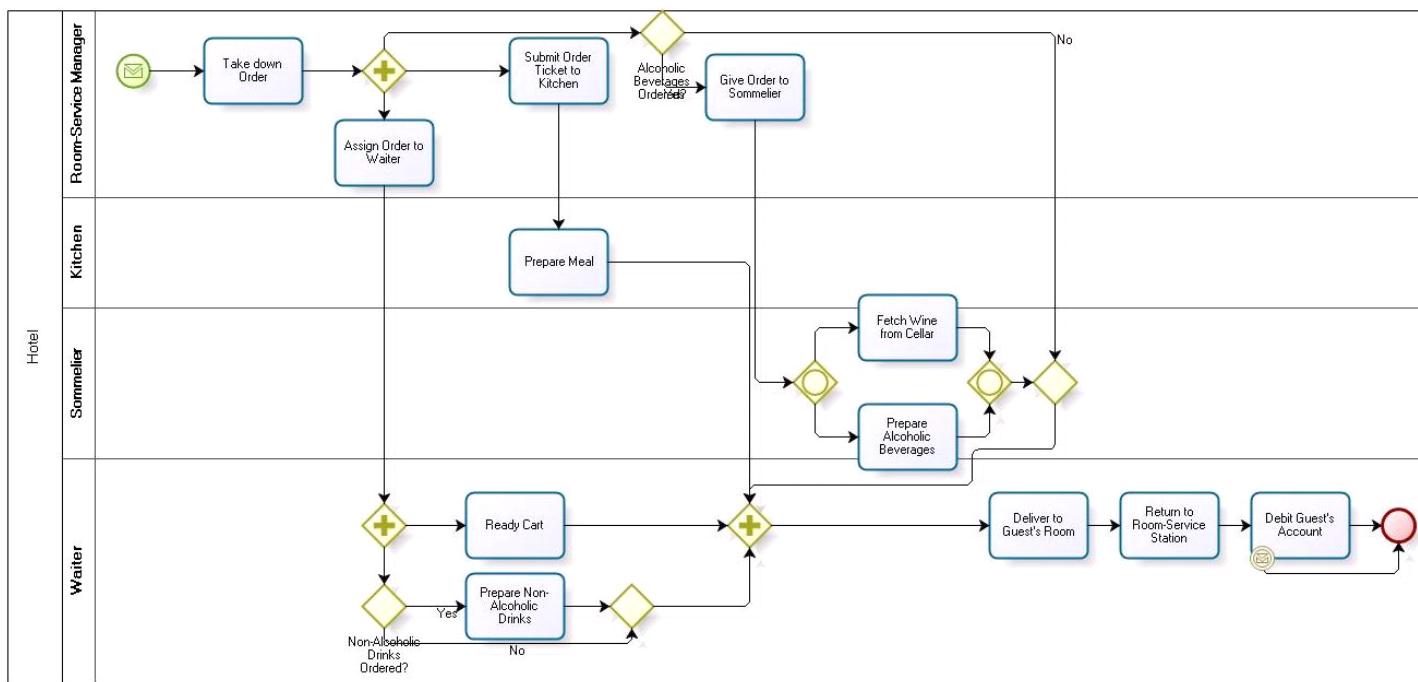


Figure B.26: Model 1-3 as created by a human modeler.

## **Text 4: Process Description 3-1: 2009-1 MC Finalise SCT**

### **Warrant Posession.**

The party sends a warrant possession request asking a warrant to be released. The Client Service Back Office as part of the Small Claims Registry Operations receives the request and retrieves the SCT file. Then, the SCT Warrant Possession is forwarded to Queensland Police. The SCT physical file is stored by the Back Office awaiting a report to be sent by the Police. When the report is received, the respective SCT file is retrieved. Then, Back Office attaches the new SCT document, and stores the expanded SCT physical file. After that, some other MC internal staff receives the physical SCT file (out of scope).

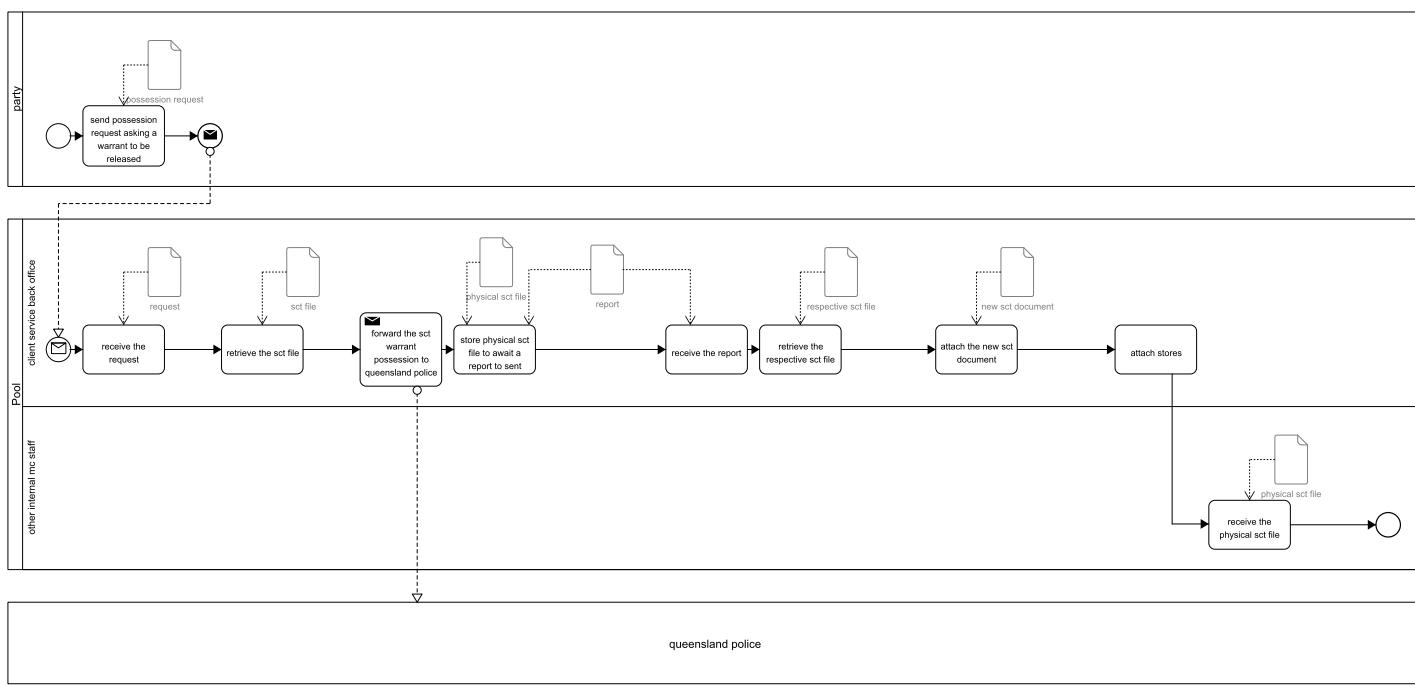


Figure B.37: Model 3-1 as generated by our system.

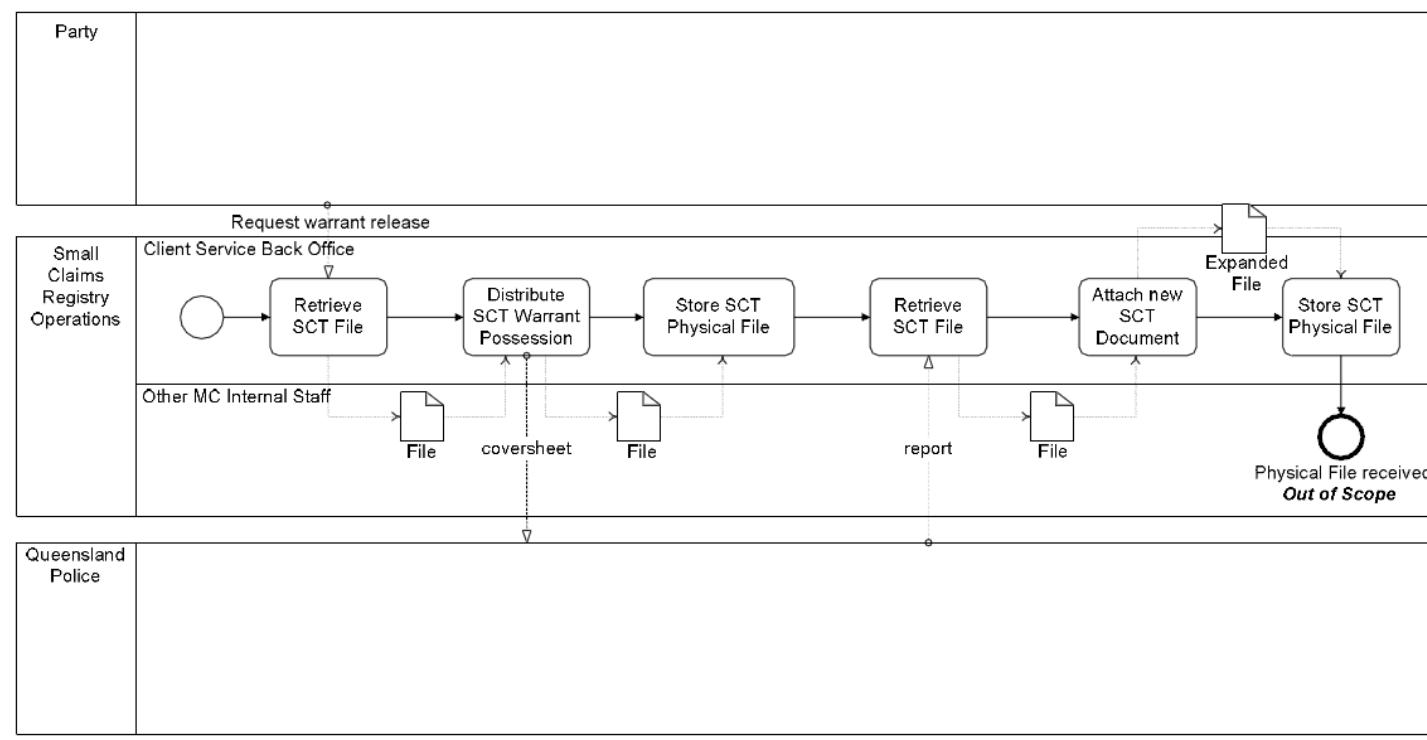


Figure B.38: Model 3-1 as created by a human modeler.

## **Text 5: Process Description 3-5: 2009-5 P&E - Lodge**

### **Originating Document by Post.**

Mail from the party is collected on a daily basis by the Mail Processing Unit. Within this unit, the Mail Clerk sorts the unopened mail into the various business areas. The mail is then distributed. When the mail is received by the Registry, it is opened and sorted into groups for distribution, and thus registered in a manual incoming Mail Register. Afterwards, the Assistant Registry Manager within the Registry performs a quality check. If the mail is not compliant, a list of requisition explaining the reason for rejection is compiled and sent back to the party. Otherwise, the matter details (types of action) are captured and provided to the Cashier, who takes the applicable fees attached to the mail. At this point, the Assistant Registry Manager puts the receipt and copied documents into an envelope and posts it to the party. Meantime, the Cashier captures the Party Details and prints the Physical Court File.

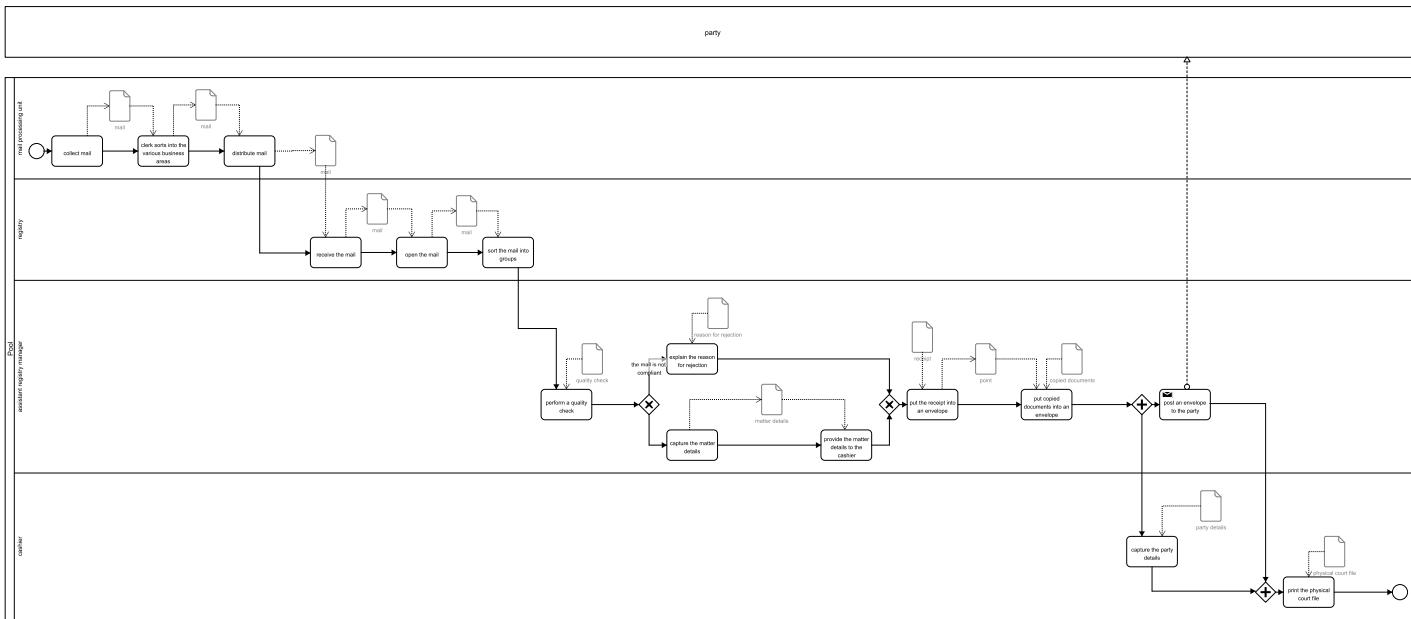


Figure B.45: Model 3-5 as generated by our system.

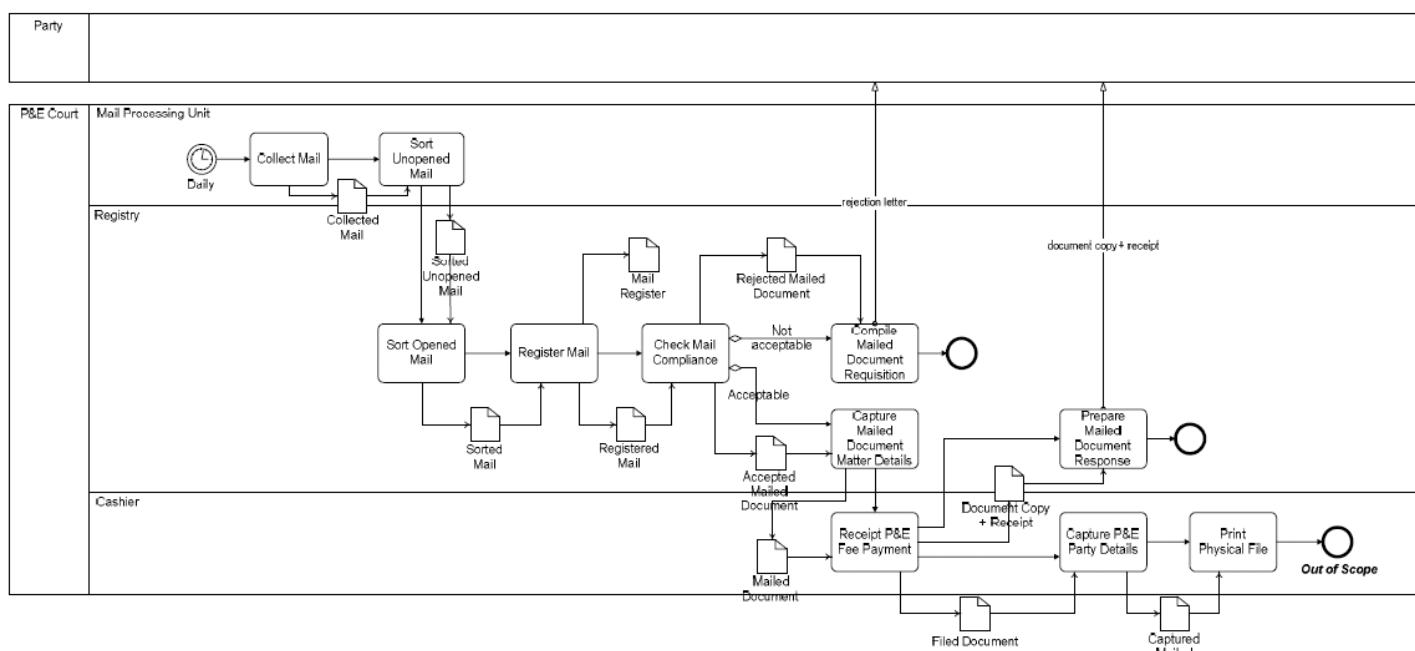


Figure B.46: Model 3-5 as created by a human modeler.

## **Text 6: Process Description 3-6: 2010-1 Claims Notification.**

When a claim is received, it is first checked whether the claimant is insured by the organization. If not, the claimant is informed that the claim must be rejected. Otherwise, the severity of the claim is evaluated. Based on the outcome (simple or complex claims), relevant forms are sent to the claimant. Once the forms are returned, they are checked for completeness. If the forms provide all relevant details, the claim is registered in the Claims Management system, which ends the Claims Notification process. Otherwise, the claimant is informed to update the forms. Upon reception of the updated forms, they are checked again.

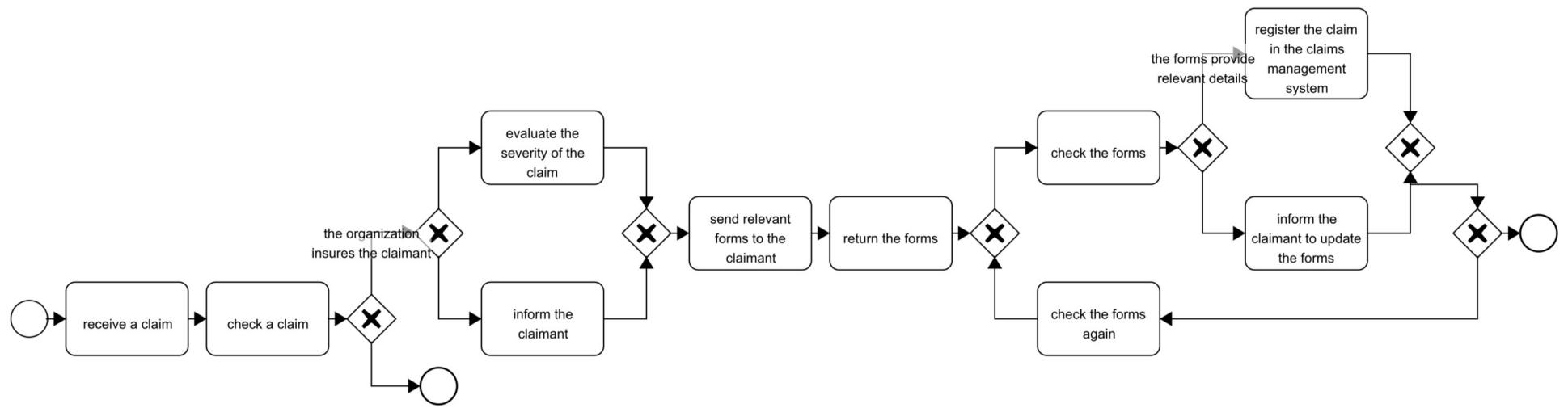


Figure B.47: Model 3-6 as generated by our system.

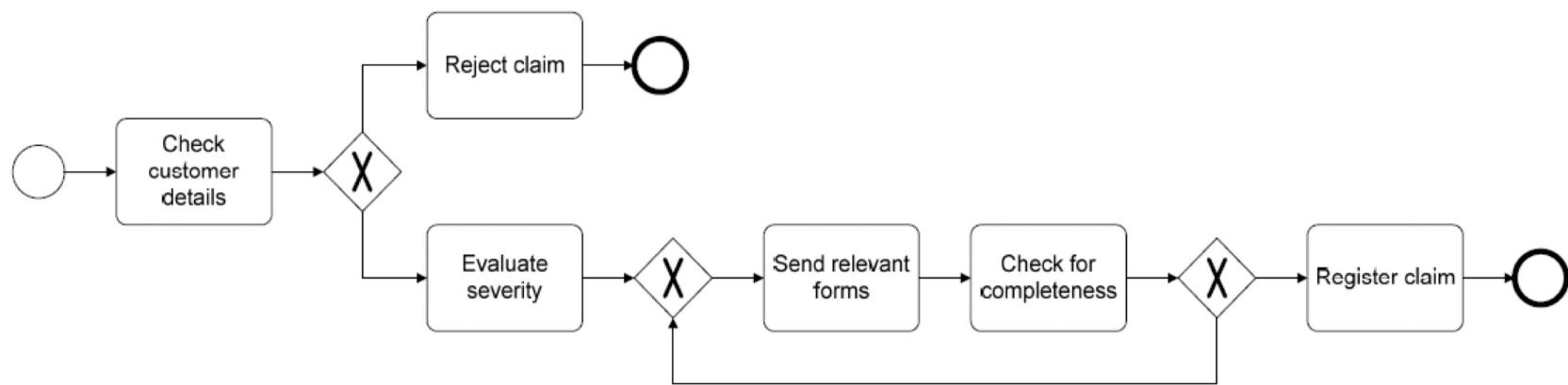


Figure B.48: Model 3-6 as created by a human modeler.

## **Text 7: Process Description 3-8: 2010-3 Claims Handling**

### **Process.**

The process starts when a customer submits a claim by sending in relevant documentation. The Notification department at the car insurer checks the documents upon completeness and registers the claim. Then, the Handling department picks up the claim and checks the insurance. Then, an assessment is performed. If the assessment is positive, a garage is phoned to authorise the repairs and the payment is scheduled (in this order). Otherwise, the claim is rejected. In any case (whether the outcome is positive or negative), a letter is sent to the customer and the process is considered to be complete.

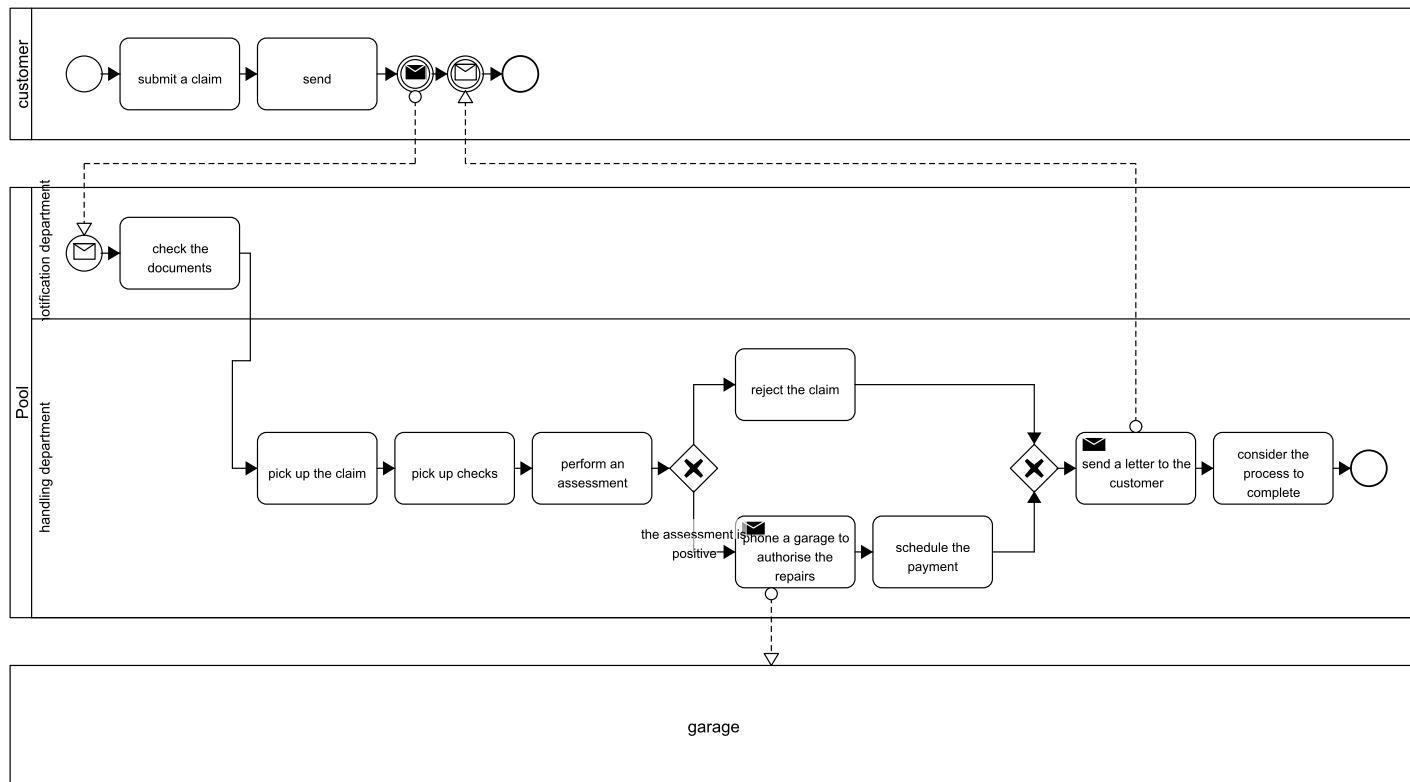


Figure B.51: Model 3-8 as generated by our system.

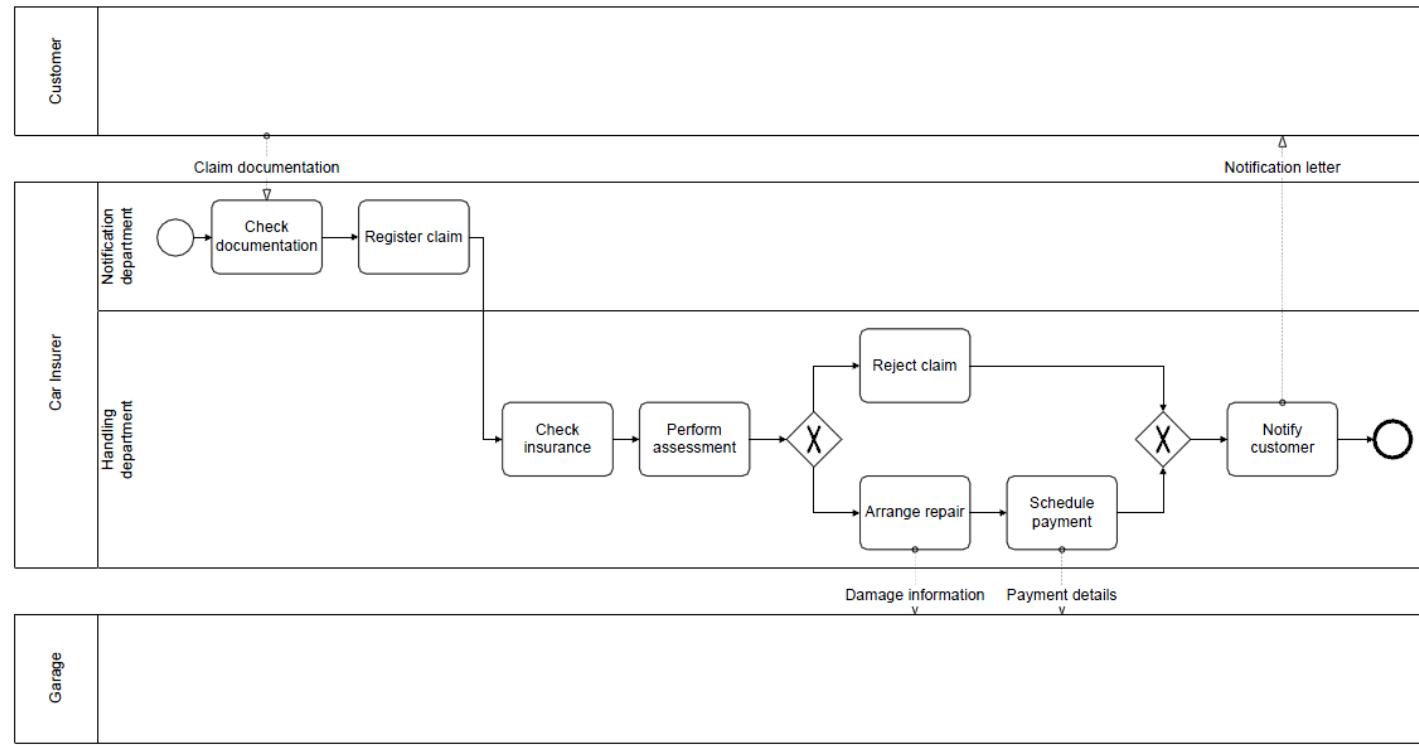


Figure B.52: Model 3-8 as created by a human modeler.

### **Text 8: Process Description 5-1: Active VOS Tutorial.**

The loan approval process starts by receiving a customer request for a loan amount. The risk assessment Web service is invoked to assess the request. If the loan is small and the customer is low risk, the loan is approved. If the customer is high risk, the loan is denied. If the customer needs further review or the loan amount is for \$10,000 or more, the request is sent to the approver Web service. The customer receives feedback from the assessor or approver.

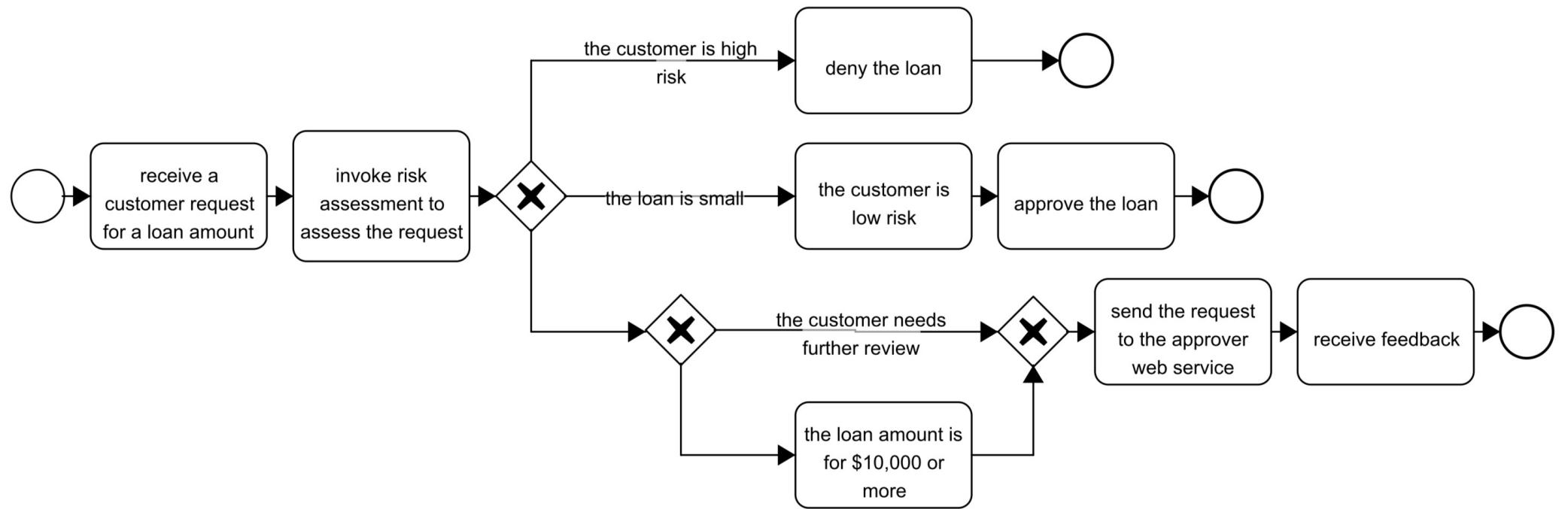


Figure B.56: Model 5-1 as generated by our system.

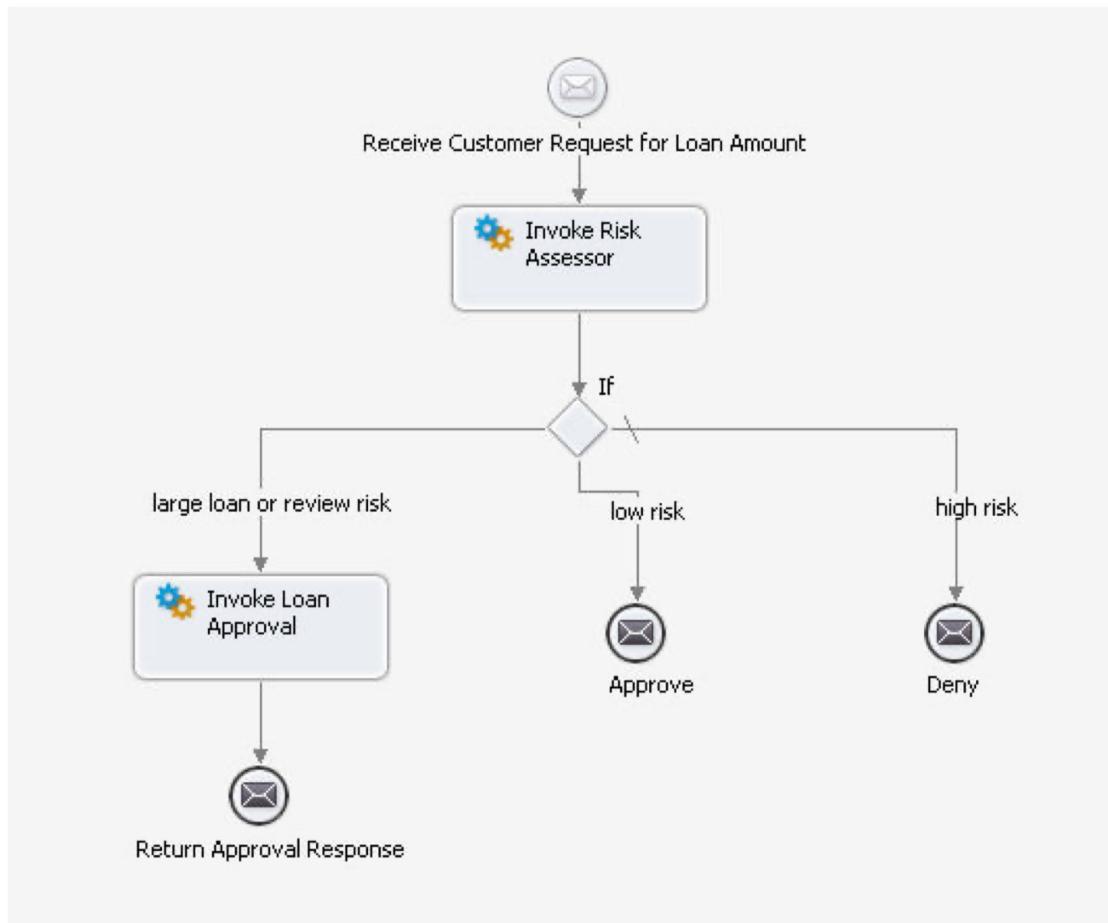


Figure B.57: Model 5-1 as created by a human modeler.

## **Text 9: Process Description 5-2: BizAgi Tutorial 1.**

The process of Vacations Request starts when any employee of the organization submits a vacation request. Once the requirement is registered, the request is received by the immediate supervisor of the employee requesting the vacation. The supervisor must approve or reject the request. If the request is rejected, the application is returned to the applicant / employee who can review the rejection reasons. If the request is approved a notification is generated to the Human Resources Representative, who must complete the respective management procedures.

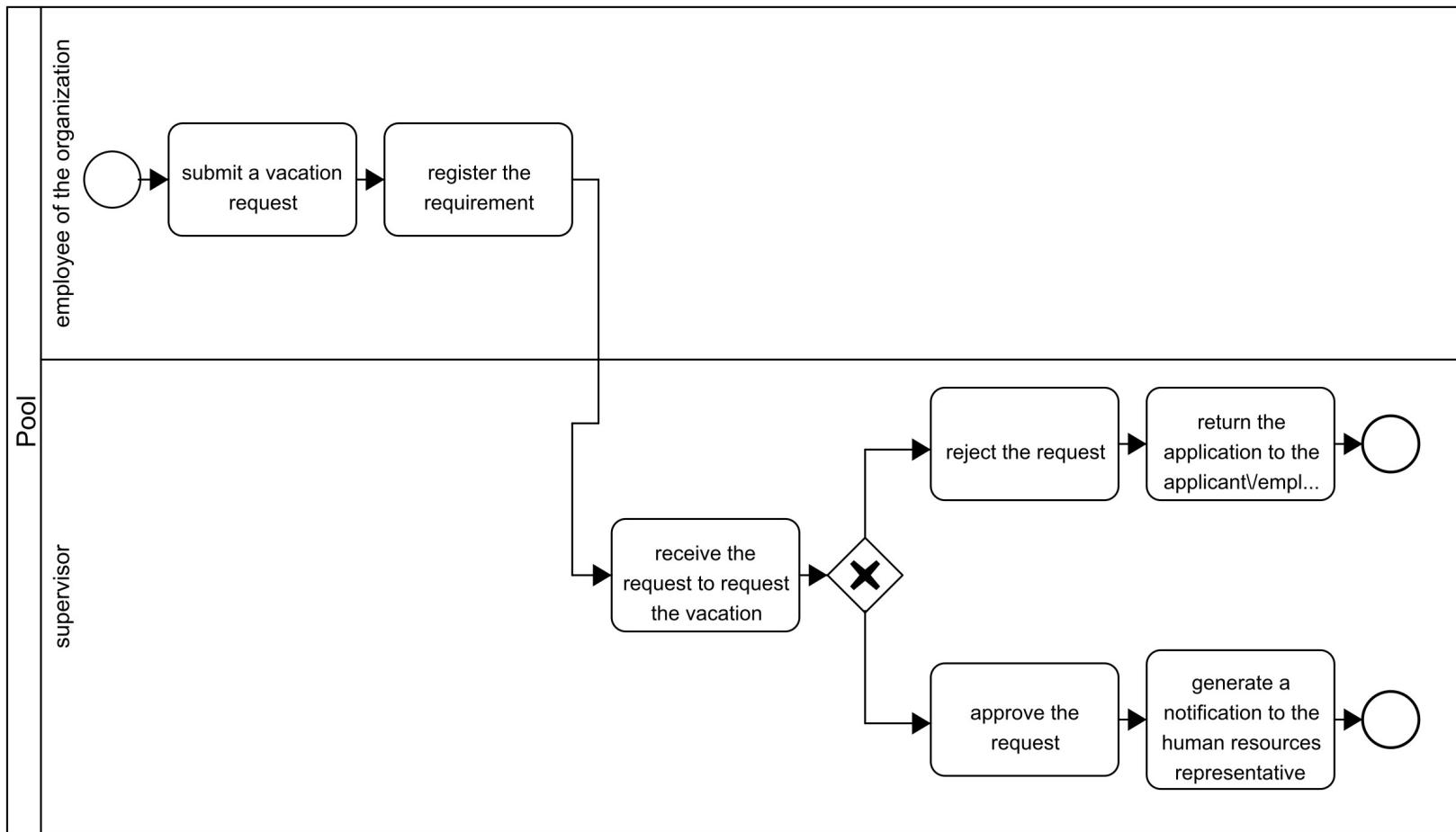


Figure B.58: Model 5-2 as generated by our system.

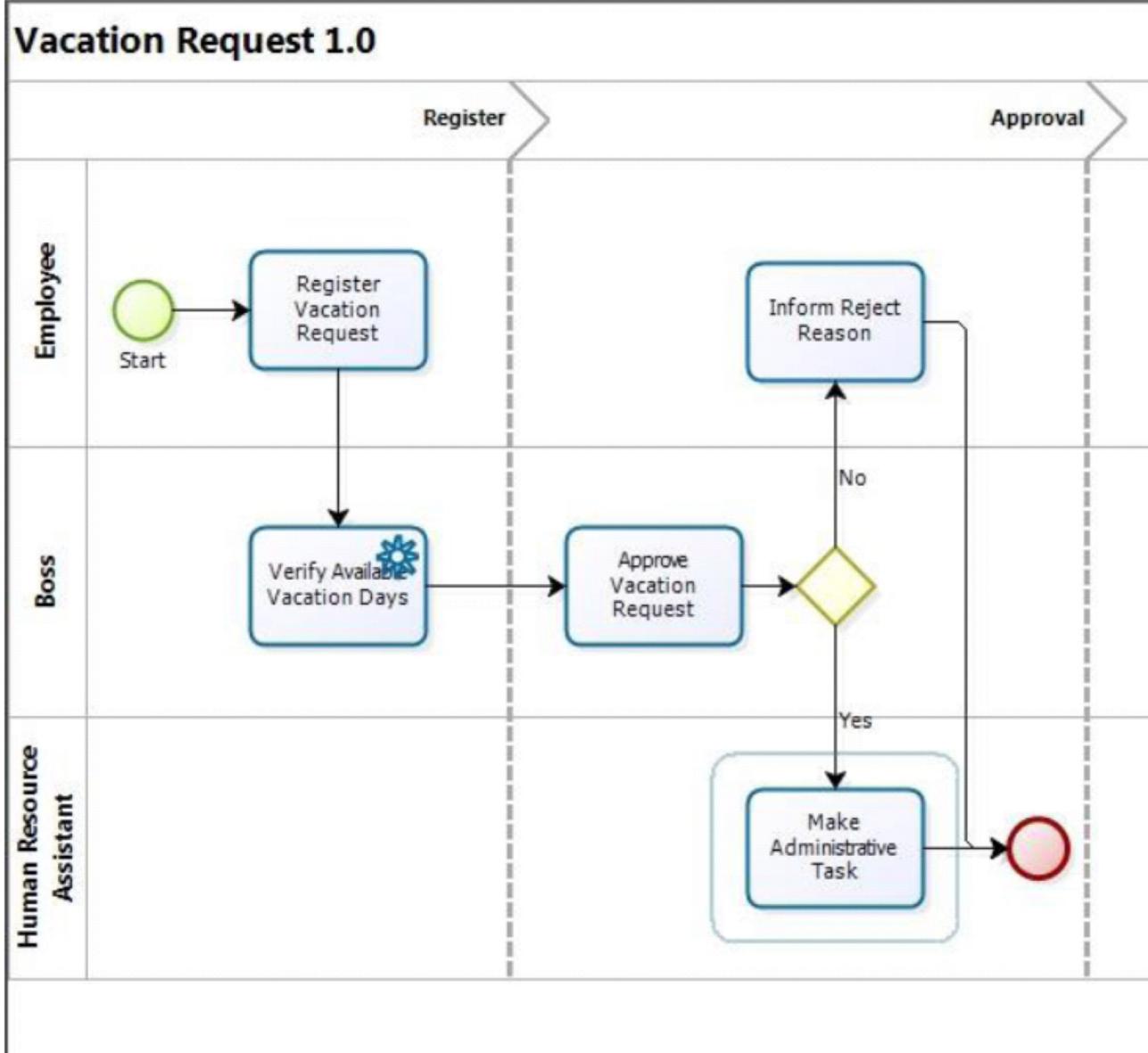


Figure B.59: Model 5-2 as created by a human modeler.

## **Text 10: Process Description 5-3: BizAgi Tutorial 2.**

The process of an Office Supply Request starts when **any employee** of the organization **submits an office supply request**. Once **the requirement** is **registered**, **the request** is **received** by **the immediate supervisor** of the employee requesting the office supplies. **The supervisor** must **approve or ask for a change**, or **reject the request**. **If the request is rejected** the process will end. **If the request is asked to make a change** then **it is returned to the petitioner / employee** who can **review the comments for the change request**. **If the request is approved** it will **go to the purchase department** that will be in charge of **making quotations** (using a subprocess) and **select a vendor**. **If the vendor is not valid in the system** the **purchase department** will have to **choose a different vendor**. After a vendor is **selected and confirmed**, **the system will generate and send a purchase order** and **wait for the product to be delivered and the invoice received**. In any case the system will send a notification to let the user know what the result was. In any of the cases, approval, rejection or change required **the system will send the user a notification**.

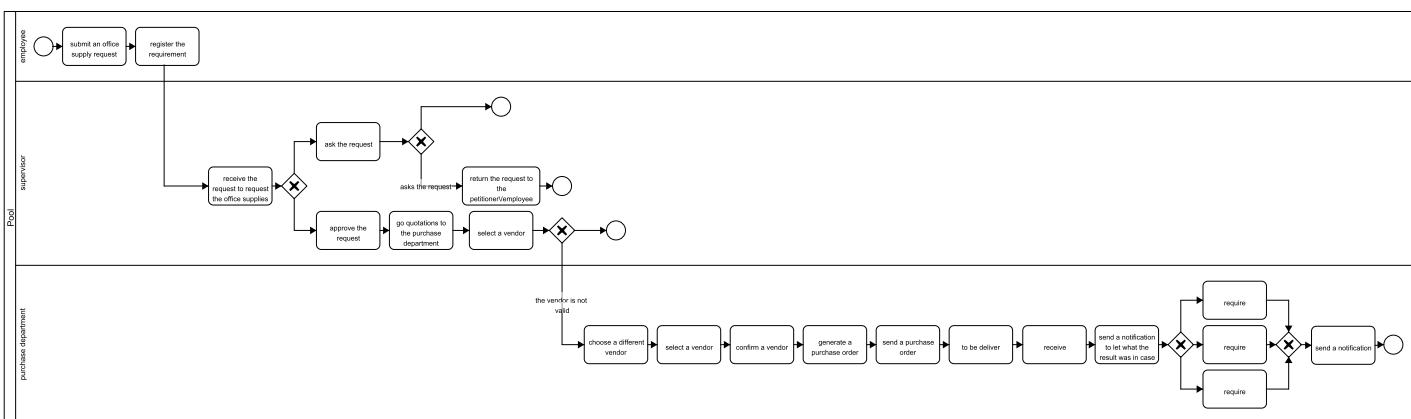


Figure B.60: Model 5-3 as generated by our system.

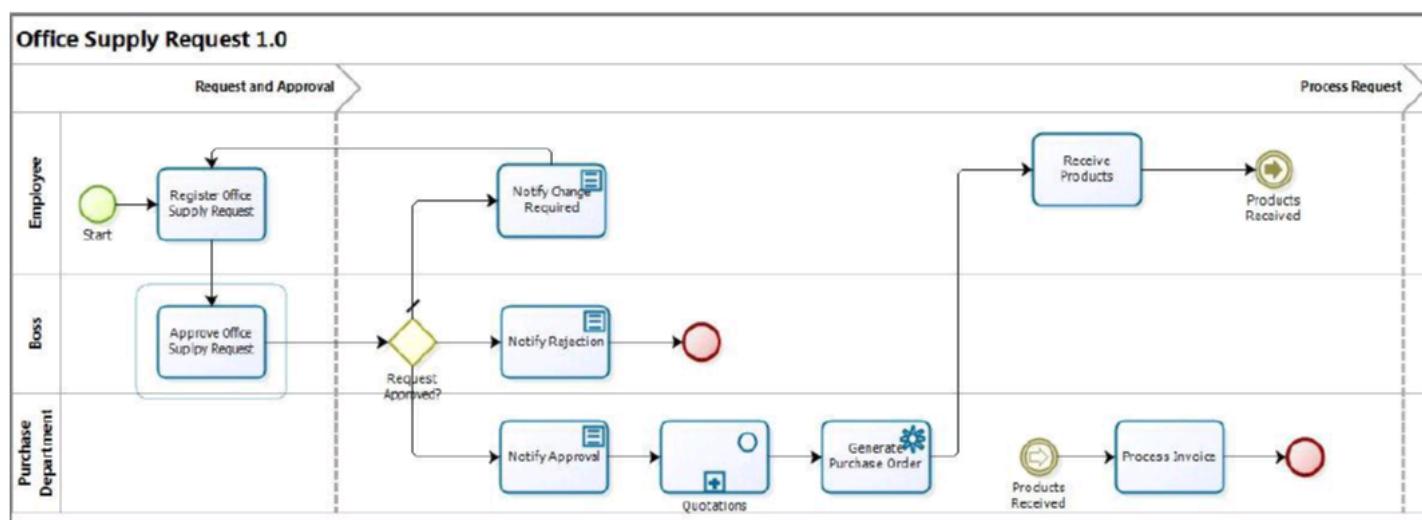


Figure B.61: Model 5-3 as created by a human modeler.

## **Text 11: Process Description 8-2: HR Process - HR Department.**

I am the HR clerk. When a vacancy is reported to me, I create a job description from the information. Sometimes there is still confusion in the message, then I must ask the Department again. I am submitting the job description for consideration and waiting for the approval. But, it can also happen that the department does not approve it, but rejects it, and requests a correction. Then I correct the description and submit it again for consideration. If the description is finally approved, I post the job.

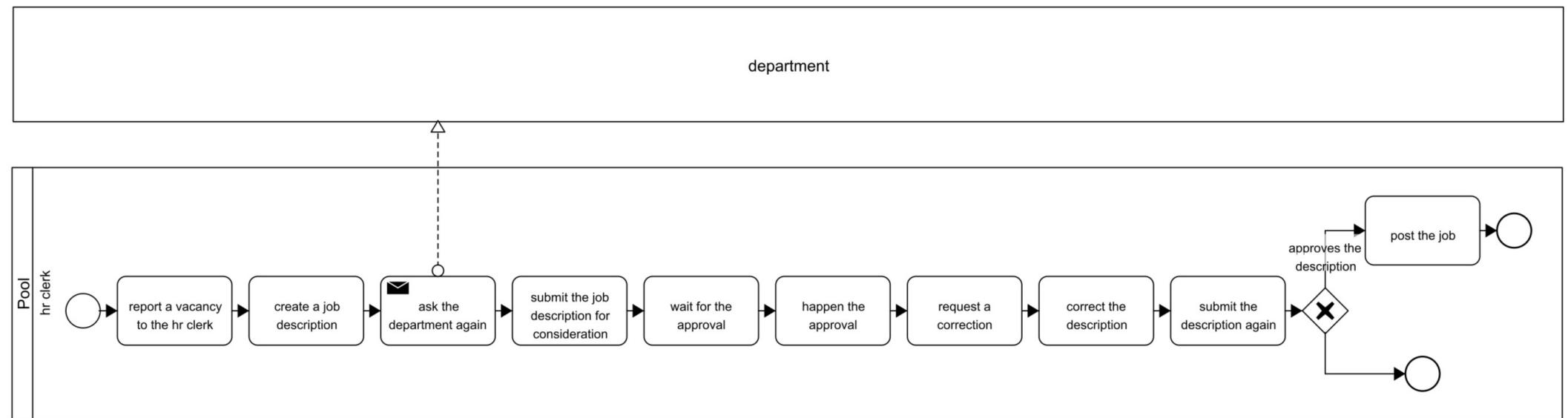


Figure B.77: Model 8-2 as generated by our system.

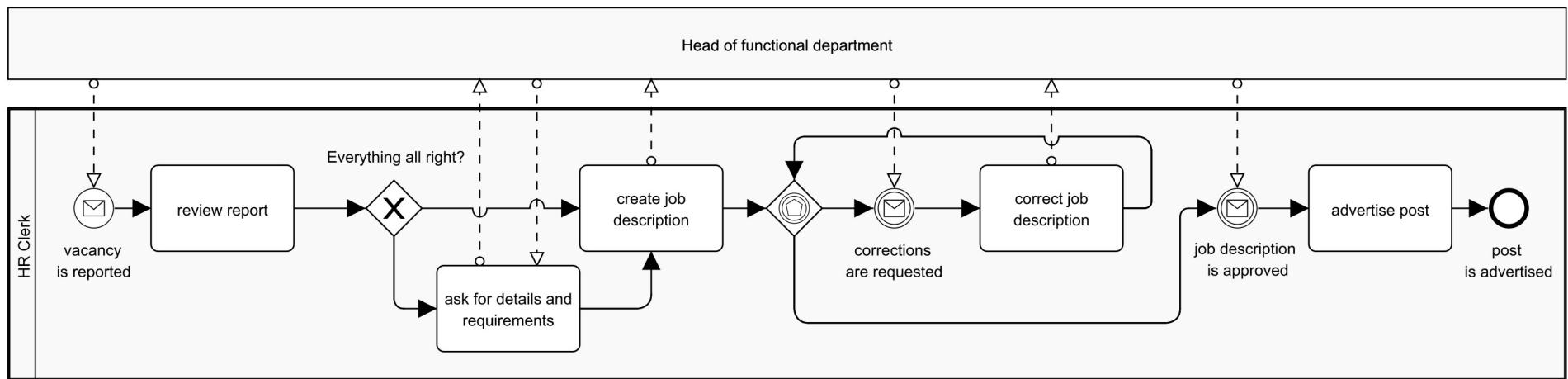


Figure B.78: Model 8-2 as created by a human modeler.

## Text 12: Process Description 6-3

Every time we get a new order from the sales department, first, one of my masters determines the necessary parts and quantities as well as the delivery date. Once that information is present, it has to be entered into our production planning system (PPS). It optimizes our production processes and creates possibly uniform work packages so that the setup times are minimized. Besides, it creates a list of parts to be procured. Unfortunately it is not coupled correctly to our Enterprise Resource Planning system (ERP), so the data must be transferred manually. By the way, that is the second step. Once all the data is present, we need to decide whether any parts are missing and must be procured or if this is not necessary. Once production is scheduled to start, we receive a notice from the system and an employee takes care of the implementation. Finally, the order will be checked again for its quality.

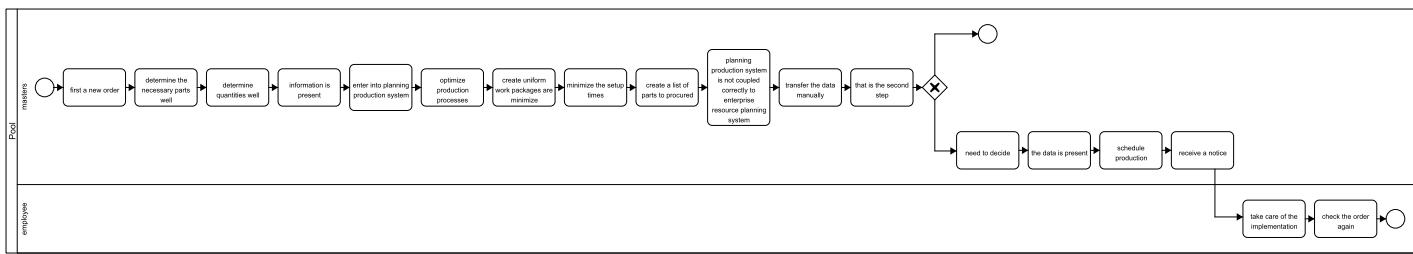


Figure B.69: Model 6-3 as generated by our system.

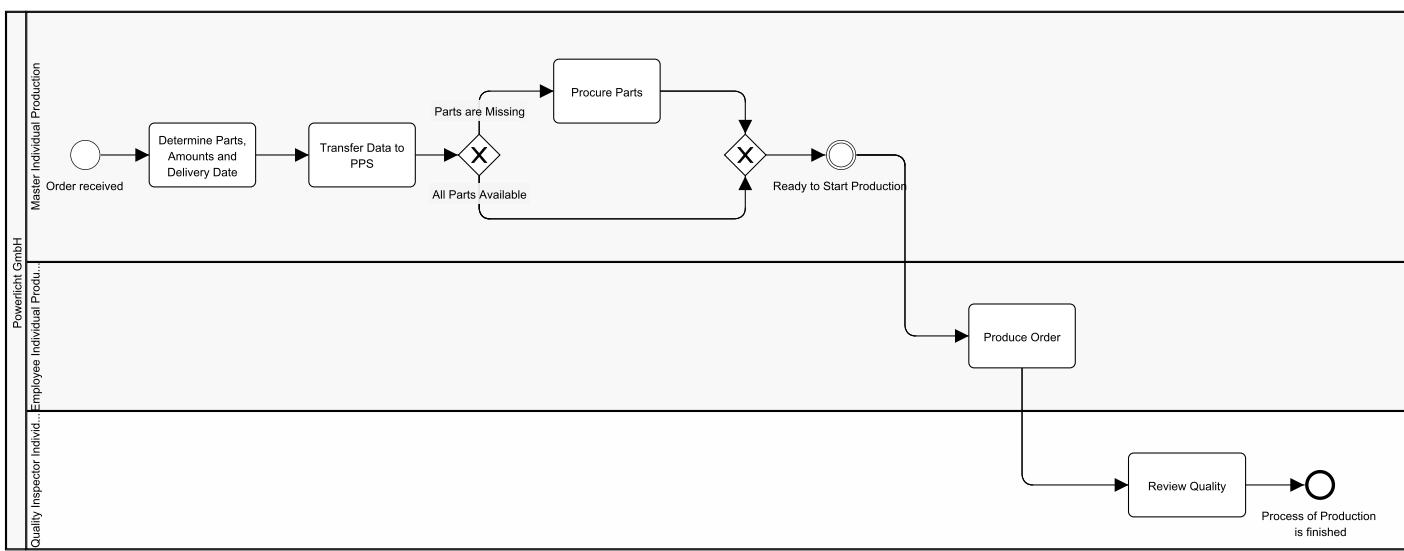


Figure B.70: Model 6-3 as created by a human modeler.

### **Text 13: Process Description 6-4: Turbopixel.**

The first step is to determine contact details of potential customers. This can be achieved in several ways. Sometimes, we buy details for cold calls, sometimes, our marketing staff participates in exhibitions and sometimes, you just happen to know somebody, who is interested in the product. Then we start calling the customer. That is done by the call center staff. They are determining the contact person and the budget which would be available for the project. Of course, asking the customer whether he is generally interested is also important. If this is not the case, we leave him alone, except if the potential project budget is huge. Then the head of development personally tries to acquire the customer. If the customer is interested in the end, the next step is a detailed online presentation. It is given either by a sales representative or by a pre-sales employee in case of a more technical presentation. Afterwards we are waiting for the customer to come back to us. If we are not contacted within 2 weeks, a sales representative is calling the customer. The last phase is the creation of a quotation.

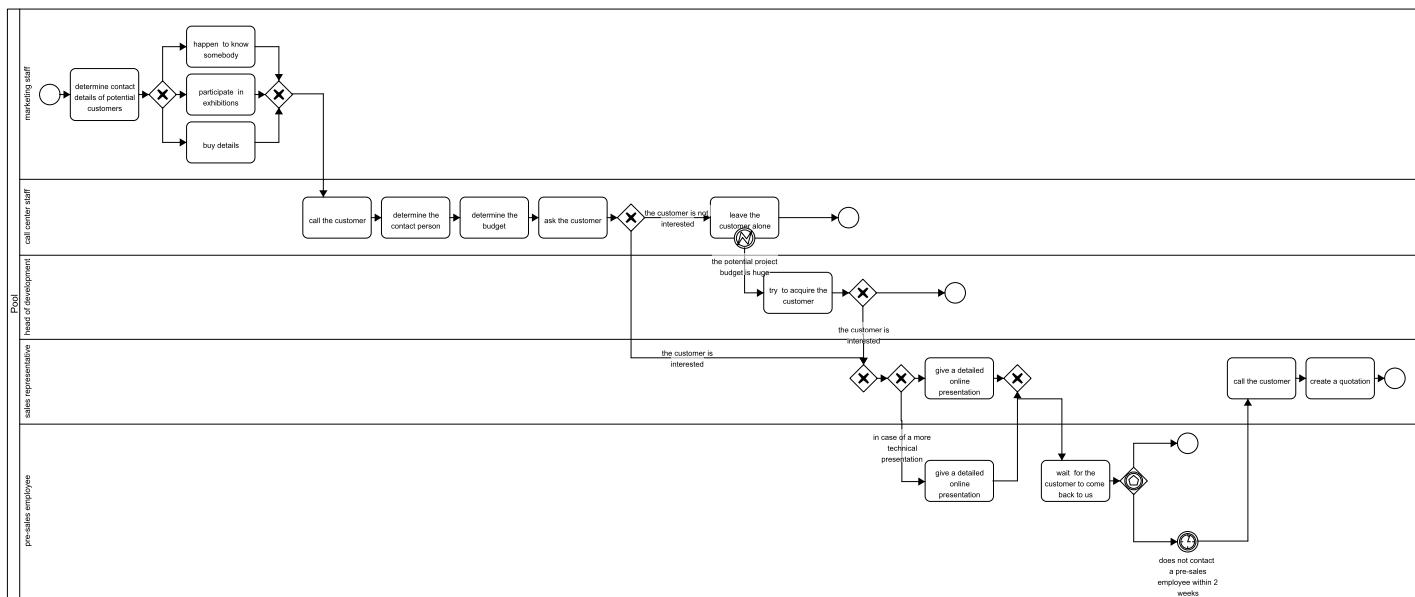


Figure B.71: Model 6-4 as generated by our system.

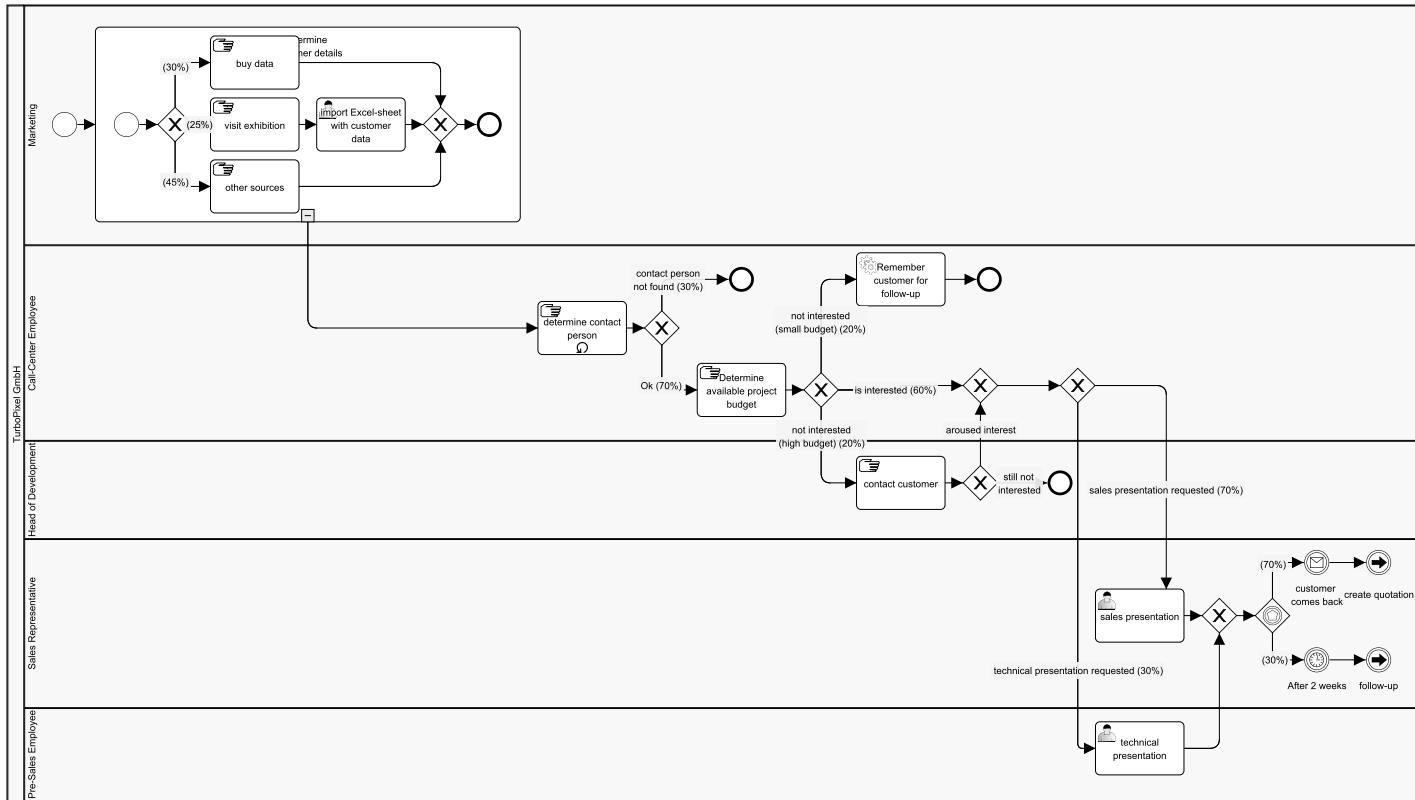


Figure B.72: Model 6-4 as created by a human modeler.

## Text 14: Process Description 6-1: ACME.

As a basic principle, ACME AG receives invoices on paper or fax. These are received by the Secretariat in the central inbox and forwarded after a short visual inspection to an accounting employee. In "ACME Financial Accounting", a software specially developed for the ACME AG, she identifies the charging suppliers and creates a new instance (invoice). She then checks the invoice items and notes the corresponding cost center at the ACME AG and the related cost center managers for each position on a separate form ("docket"). The docket and the copy of the invoice go to the internal mail together and are sent to the first cost center manager to the list. He reviews the content for accuracy after receiving the copy of the invoice. Should everything be in order, he notes his code one on the docket ("accurate position - AP") and returns the copy of the invoice to the internal mail. From it, the copy of the invoice is passed on to the next cost center manager, based on the docket, or if all items are marked correct, sent back to accounting. Therefore, the copy of invoice and the docket gradually move through the hands of all cost center managers until all positions are marked as completely accurate. However, if inconsistencies exist, e.g. because the ordered product is not of the expected quantity or quality, the cost center manager rejects the AP with a note and explanatory statement on the docket, and the copy of the invoice is sent back to accounting directly. Based on the statements of the cost center managers, she will proceed with the clarification with the vendor, but, if necessary, she consults the cost center managers by telephone or e-mail again. When all inconsistencies are resolved, the copy of the invoice is sent to the cost center managers again, and the process continues. After all invoice items are AP, the accounting employee forwards the copy of the invoice to the commercial manager. He makes the commercial audit and issues the approval for payment. If the bill amount exceeds EUR 20, the Board wants to check it again (4 - eyes-principle). The copy of the invoice including the docket moves back to the accounting employee in the appropriate signature file. Should there be a complaint during the commercial audit, it will be resolved by the accounting employee with the supplier. After the commercial audit is successfully completed, the accounting employee gives payment instructions and closes the instance in "ACME financial accounting".

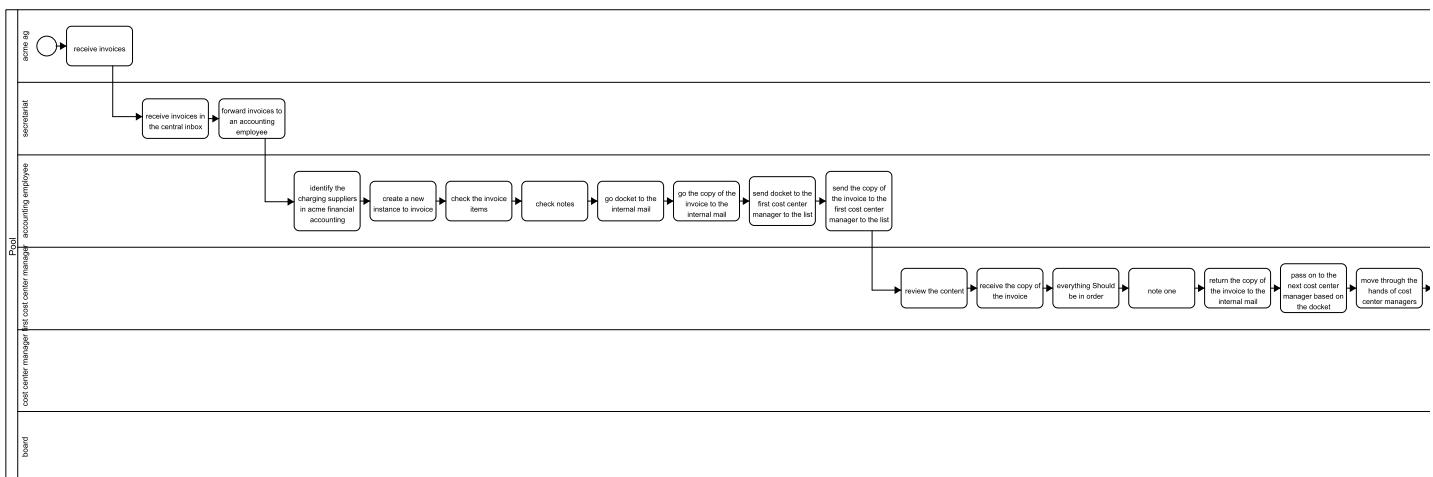


Figure B.64: Model 6-1 as generated by our system (part 1).

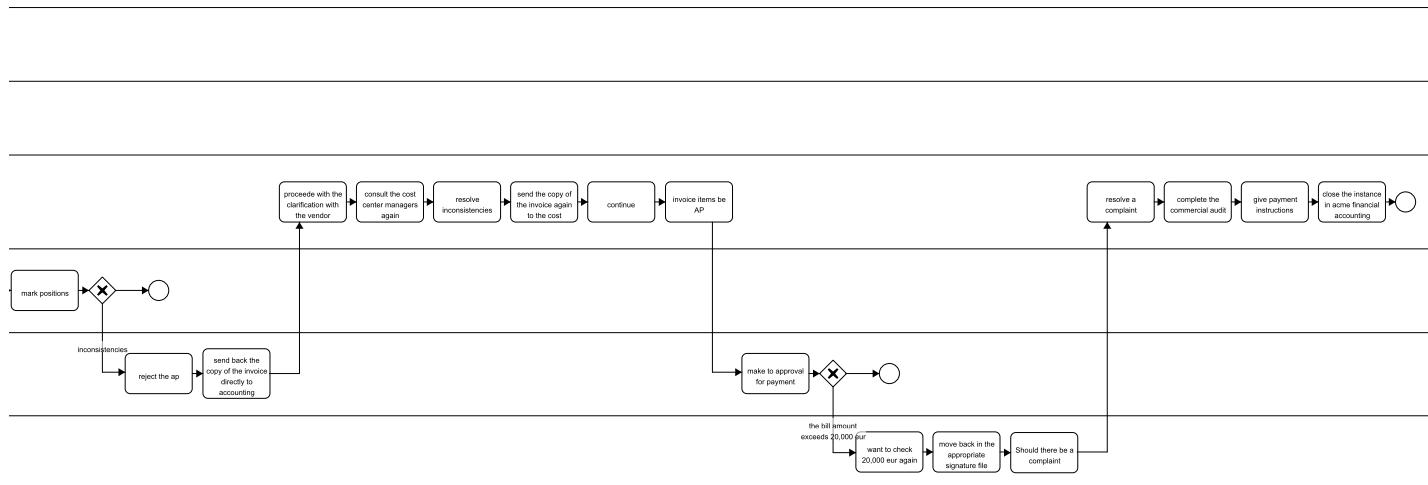


Figure B.65: Model 6-1 as generated by our system (part 2).

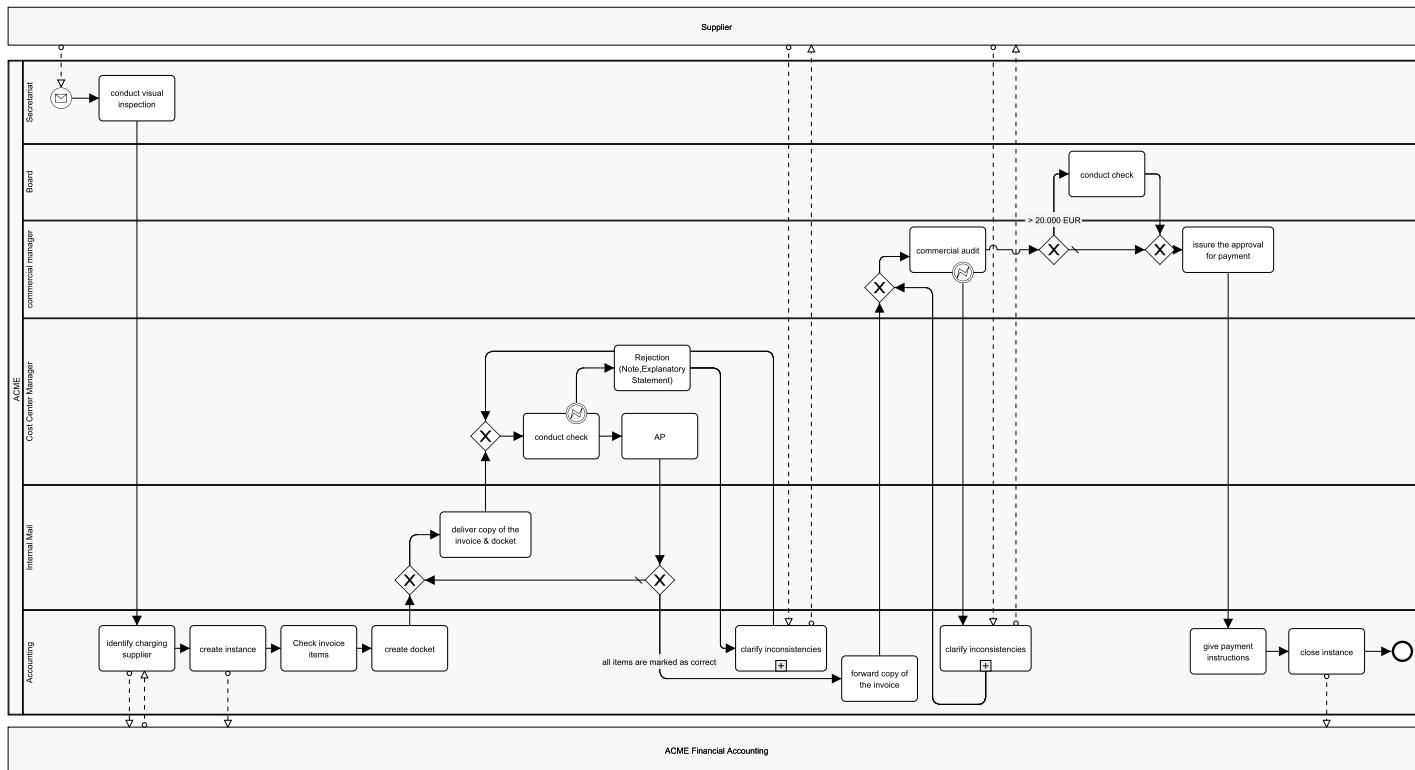


Figure B.66: Model 6-1 as created by a human modeler.

## Text 15: Process Description 2-2: Supplier Switch.

The process is initiated by a switch-over request. In doing so, **the customer transmits his data** to **the customer service department** of the company. Customer service is a shared service center between the departments Sales and Distribution. **The customer data** is received by **customer service** and based on this data **a customer data object** is **entered** into the CRM system. After customer data has been entered it should then be **compared** with **the internal customer data base** and **checked** for completeness and plausibility. **In case of any errors** **these** should be **corrected** on the basis of a simple error list. The comparison of data is done to prevent individual customer data being stored multiple times. **In case the customer does not exist in the customer data base**, **a new customer object** is being **created** which will remain the data object of interest during the rest of the process flow. This object consists of data elements such as the customer's name and address and the assigned power gauge. The generated customer object is then used, in combination with other customer data to **prepare the contract documents for the power supplier switch** (including data such as bank connection, information on the selected rate, requested date of switch-over). In the following an automated **check** of **the contract documents** is carried out within **the CIS** (customer information system) in order to confirm their successful generation. **In case of a negative response**, i.e. the contract documents are not (or incorrectly) generated, **the causing issues** are being **analyzed** and **resolved**. Subsequently **the contract documents** are **generated** once again. **In case of a positive response** a confirmation document is sent out to **the customer** stating that the switch-over to the new supplier can be executed. **A request** to **the grid operator** is automatically **sent out** by **the CIS**. It puts the question whether the customer may be supplied by the selected supplier in the future. **The switch-over request** is **checked** by **the grid operator** for supplier concurrence, and **the grid operator** **transmits a response comment**. **In the case of supplier concurrence** the grid operator would **inform** all involved suppliers and **demand the resolution of the conflict**. **The grid operator** **communicates** with **the old supplier** and **carries out the termination of the sales agreement** between the customer and the old supplier (i.e. the customer service (of the new supplier) does not have to interact with the old supplier regarding termination). **If there are not any objections by the grid operator** (i.e. no supplier concurrence), **customer service creates a CIS contract**. The customer then has the chance to **check the contract details** and based on this check may decide to **either withdraw from the switch contract or confirm it**. Depending on the customer's acceptance / rejection the process flow at customer service either ends (in case of withdrawal) or continues (in case of a confirmation). An additional constraint is that the customer can only withdraw from the offered contract within 7 days after the 7th day the contract will be regarded as accepted and the process continues. The confirmation message by the customer is therefore not absolutely necessary (as it will count as accepted after 7 days in any way) but

it can speed up the switch process. On the switch-date, but no later than 10 days after power supply has begun, the grid operator transmits the power meter data to the customer service and the old supplier via messages containing a services consumption report. At the same time, the grid operator computes the final billing based on the meter data and sends it to the old supplier. Likewise the old supplier creates and sends the final billing to the customer. For the customer as well as the grid operator the process ends then. After receiving the meter data customer service imports the meter data to systems that require the information. The process of winning a new customer ends here.

## APPENDIX B DETAILED TEST DATA SETS

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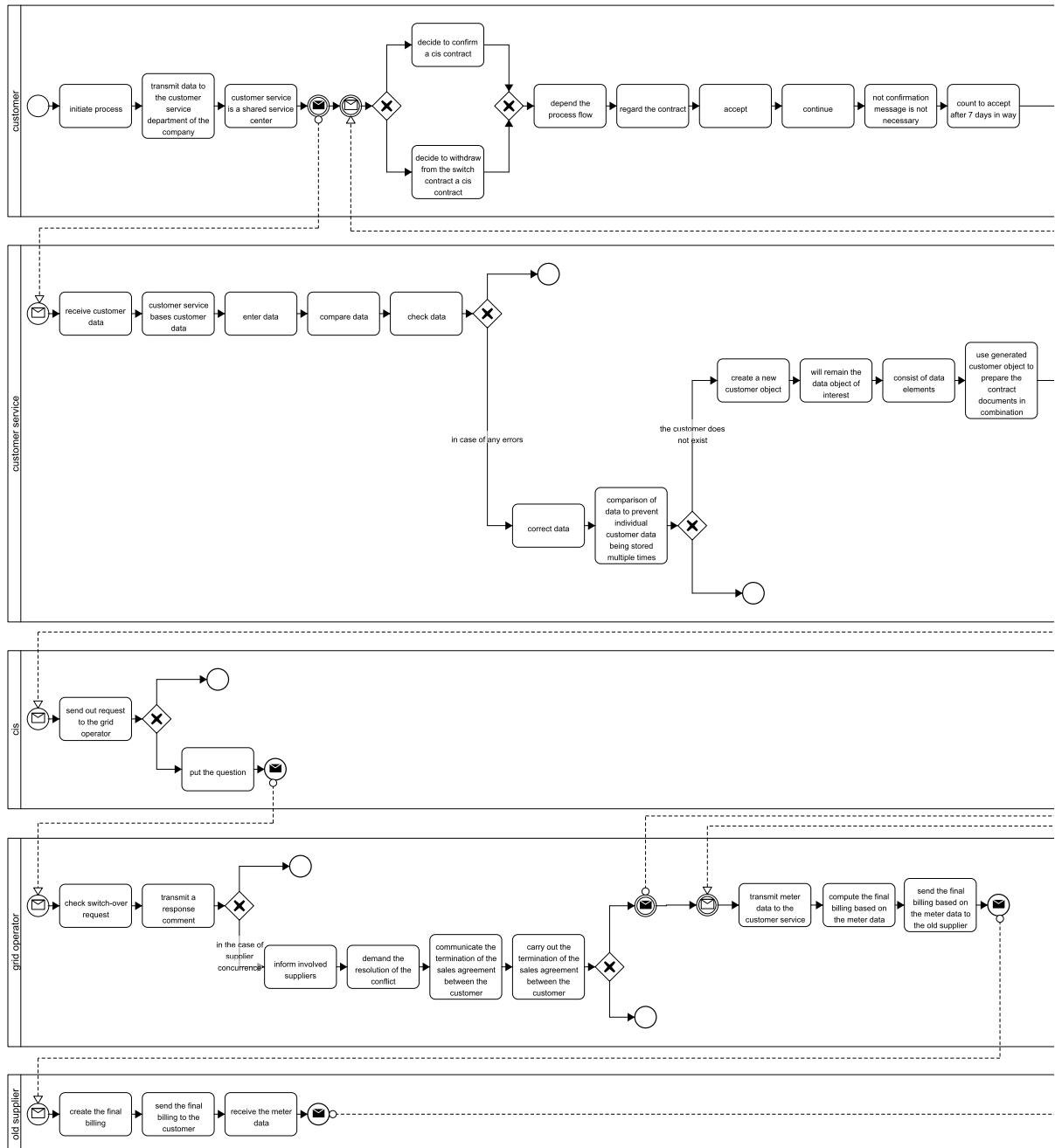


Figure B.33: Model 2-2 as generated by our system (part 1).

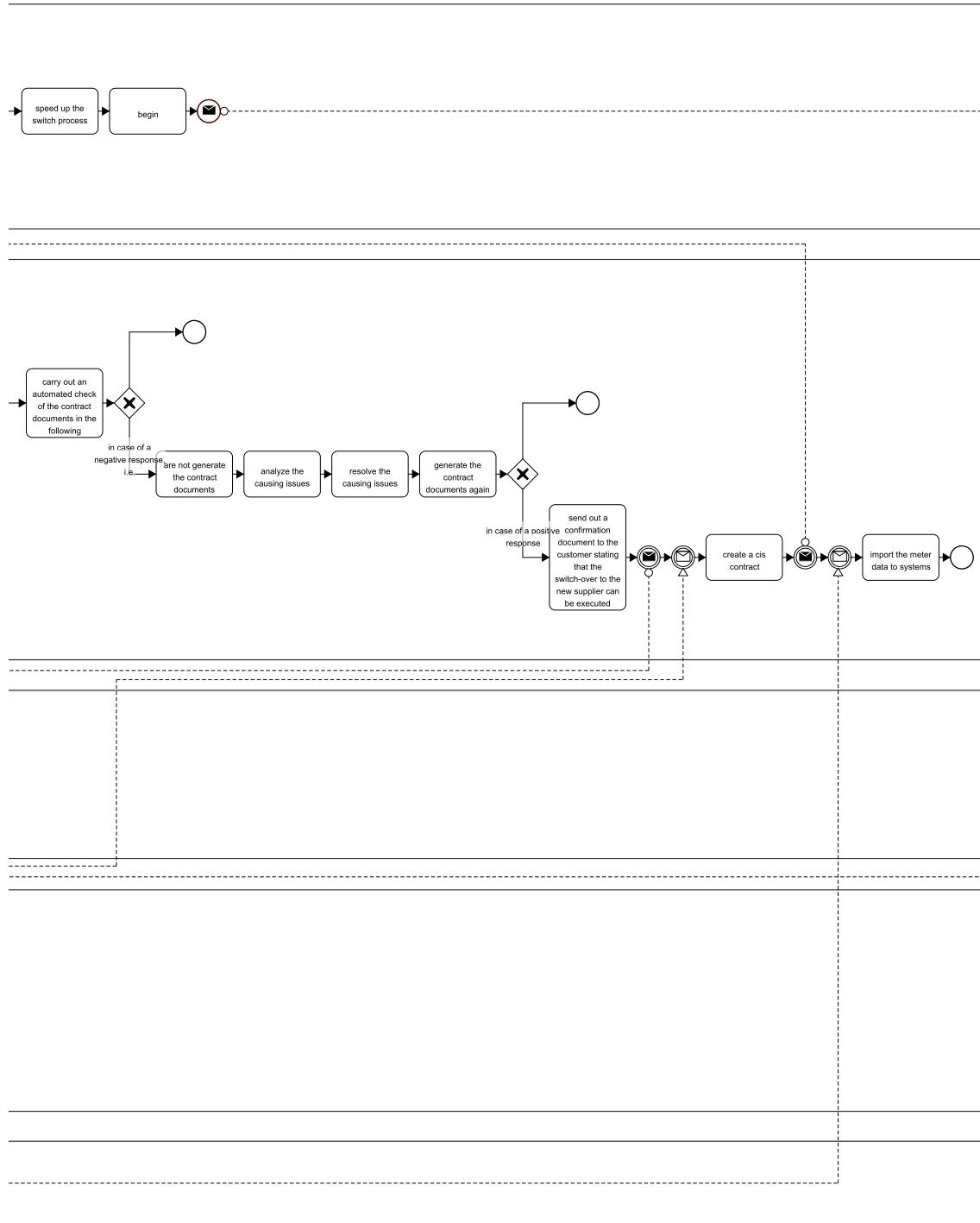


Figure B.34: Model 2-2 as generated by our system (part 2).

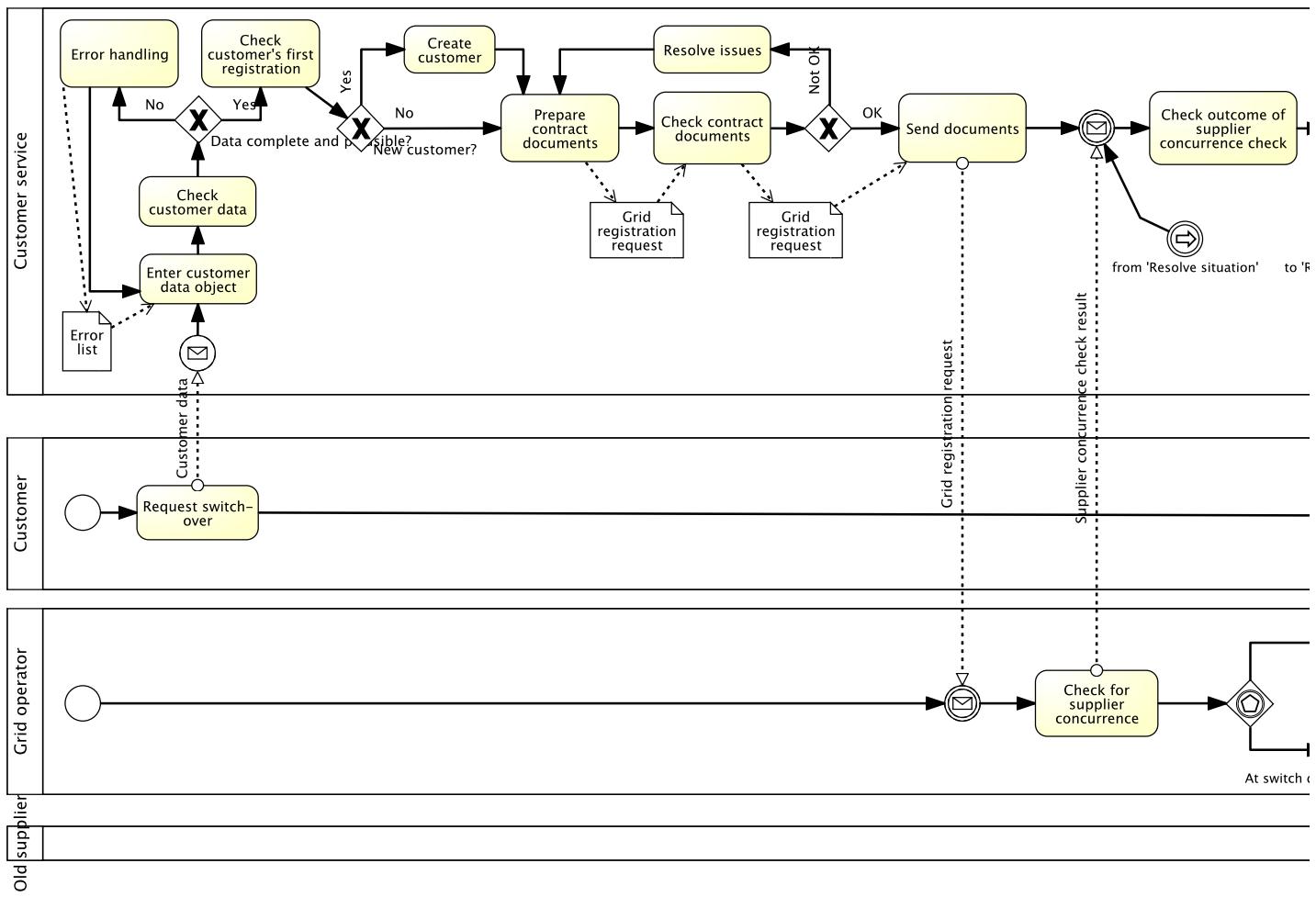


Figure B.35: Model 2-2 as created by a human modeler (part 1).

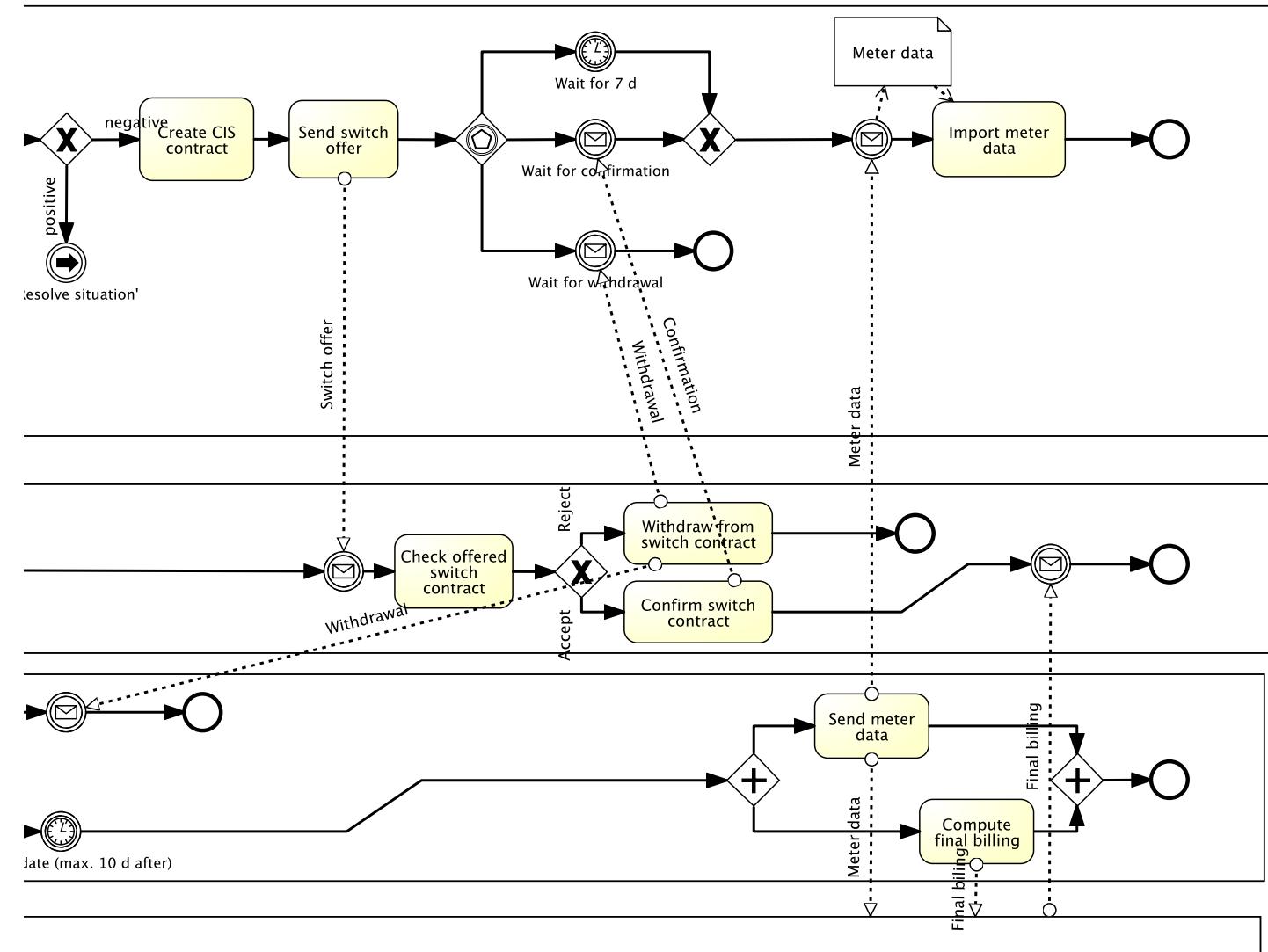


Figure B.36: Model 2-2 as created by a human modeler (part 2).