

# Tarkvaratehnika

## Service-Oriented Architecture – Classwork Exercise

To be done in groups of 4.

Tasks:

1. To design a service-oriented architecture for the scenario below, including data-centric and/or logic-centric services, process-centric services and public services.
2. Time allowing, capture the loan application business process in a flowchart-like notation.

### Scenario: Loan Application Processing

A bank wants to enable other entities to operate as resellers of loans that it provides. In this construction, resellers perform commercial activities, such as marketing and commercial contact with the clients, while the administrative activities stay with the bank.

#### **Entities**

Within the bank, the loan department is the main entity responsible for processing loan applications. The *loan department* of the bank interacts with six parties:

- *The client*: The loan department interacts with clients either directly or indirectly through a re-seller for the purpose of processing loan applications.
- *The reseller*: Resellers may act as intermediaries between the client and the bank for the purpose of relaying loan applications and/or loan offers.
- *The Bureau of Credit Registration*: The bank may interact with the Bureau of Credit Registration (BCR), a national entity that maintains information on bank loans.
- *The notary*: The bank may interact with a notary to draw up a legal statement about the loan.
- *The insurance department*: Some loans are coupled with an offer to insure the loan. For the purpose of selling a loan that is coupled to an insurance offer, the loan department interacts with the insurance department.
- *The payment department*: For the purpose of disbursing a loan, the loan department interacts with the payment department and with the client.

The loan department, the payment department and the insurance department are all departments of the bank.

#### **Business Process**

The loan application business process starts with the receipt of a loan application from a client. It finishes when either the loan department rejects the loan application, or when the client rejects the loan offer formulated by the bank, or when the loan is disbursed to the client.

When an application is sent in by the client to the reseller, the reseller may either deal with the application itself or forward the application to the bank. The reseller may only deal with the application itself if the amount of the loan is within the mandate that the reseller has been given by the bank. If the reseller deals with the application itself, this results in either a rejection or an offer being sent back to the client by the reseller. If the bank deals with the application, it may check the credit of the client with the BCR. The bank may also request an offer for an additional insurance for the loan with the insurance department. After these optional interactions the bank either sends an

offer or a rejection to the reseller, which the reseller then forwards to the client (this interaction may also happen directly between the loan department and the client if no reseller is involved).

After an offer has been submitted to the client, the client may either accept or reject the offer by notifying this to the reseller. If the client accepts the offer, this notification is forwarded to the loan department. If the loan department receives an acceptance notification from the client, it may start an insurance contract for the loan and it may decide to write a deed and to send it to a notary for signature. In this latter case, the notary sends a copy of the signed deed to the loan department. Alternatively, the loan department sends an internal deed that has not been signed by a notary to the reseller. The reseller forwards the deed to the client. Finally, the loan department submits a disbursement request to the payment department. When this disbursement request has been handled, the payment department notifies the client directly.