Description of the task

You have to build a language for the modelling of the process involved in the *Interest Rate Swaps (IR Swaps)* between companies that are customers of a bank. An interest rate swap is a derivative contract between two or more parties (also called *legs*) according to their desired specifications. Swaps are often used if a company can borrow money from a bank at one type of interest rate (for example, fixed) but prefers to pay the loan at a different type (for example, floating). Then, the company decides to swap its conditions with another entity making periodic payments based on an agreed amount. Because the parties involved in a swap trade over the counter (OTC), which means, they operate outside the conditions offered by the trading markets, each part needs to specify its conditions to operate. To guarantee the operation, the swapping process have to be executed over a blockchain-based ecosystem with an external entity acting as a validator. Next, we present an example of Plain Vanilla Swap, the simplest version of the problem:

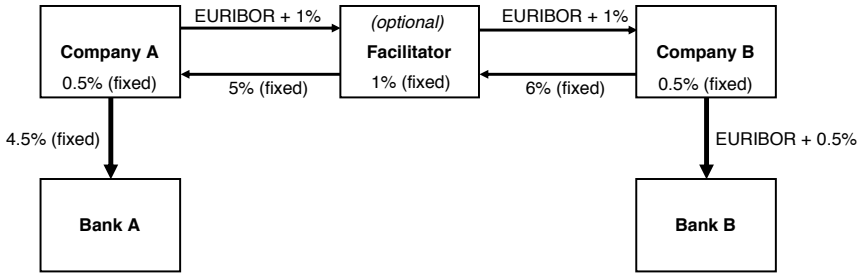

Figure 1: Example of Plain Vanilla Swap using a facilitator entity

The language have to include elements showing the variety of finantial entities involved, concepts from the finantial domain and the information required to describe the interchange operation. To help you, you will receive a set of resources taken from: (*i*) the Finance Domain Task Force of the OMG[1], which includes information on financial entities in OWL and RDF formats; (*ii*) the *Blondie* Ontology, which contains information describing the interchange operation; (*iii*) Ecore files available on the OMG repository[2] with standard meta-models, such as BMM, BPEL or BPMN; and (*iv*) Ecore files available in open repositories with concepts in the banking domain.

You will receive the 4.5.2 (Mars.2) version of the Eclipse IDE[3] with the Eclipse Modelling Tools package that has been installed in a virtual machine running Windows 7. In addition, we have installed **Extremo**, a tool for modelling and meta-modelling assistance. **Extremo** gathers heterogeneous information sources and represents them uniformly in a common repository. This enables their uniform querying and constraint evaluation. In addition, you can use a web navigator to look for information and get familiar with the concepts of the domain.

Task to perform

Build a meta-model describing the domain using the Ecore Model Editor. The meta-model is expected to be as complete as possible regarding the types of entities involved. Submit your solution sending an email to **Angel.MoraS@uam.es** with the file in ".ecore" format.

[1] `https://www.omg.org/fdtf/projects.htm`

[2] The OMG is the standarization body behind many modelling standards such as UML, SysML, MOF or BPMN. (`http://www.omg.org/spec/`)

[3] `http://www.eclipse.org/downloads/packages/release/Mars/2`