

## Softwarekonstruktion - Exercise 6

### 6 OCL

This exercise should be solved until Friday, December 3rd, 2010.

You can use the open source editor [Papyrus UML](#) to accomplish syntax and type checks of your OCL expressions. Thus, you can avoid common mistakes. First, you have to draw the necessary parts of the class diagram of the airport example using Papyrus UML. Second, you can insert a OCL expression by selecting the context (e.g., a class), selecting “Constraints” in the “Properties” window, and then by clicking on the “+” button. The OCL parser starts when you click the “Evaluate” button. Do not forget to click the “Save” button to store your OCL expressions!

#### 6.1 Airport Example: Different Context

Consider the airport example in the OCL introduction. Express the following invariant

*context Passenger*

*inv : self.age > 95 implies self.needsAssistance = Assistance :: wheelchair*  
 (each passenger with an age above 95 needs assistance by a wheelchair)

in the context *Flight*.

#### 6.2 Airport Example: Class Invariant

Express in OCL that each flight with more than 100 passengers is operated by Lufthansa

1. in the context *Flight* and
2. in the context *Airport*.

#### 6.3 Airport Example: Class Invariant

Express in OCL that each arriving flight is carried out by an airline in the context *Airport*.

#### 6.4 Airport Example: Pre- and Postconditions

Develop an operation *cancelBooking* that reverts the operation *book* presented in the OCL introduction.