

# ***Distributed and Outsourced Software Engineering (DOSE)***

## ***Assignment 3: Interface Specifications using Contracts***

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*(10 points of 100)*

*Deadline: Tuesday, November 8<sup>th</sup> - 8 am (Zurich time)  
Commit the files at*

*[https://svn.origo.ethz.ch/dose2011/src/group\\_n/](https://svn.origo.ethz.ch/dose2011/src/group_n/)*

*where n is your group number.*

### **1. Questionnaire**

***Each team should have collected the time expended in Assignment 2. Christian Estler will contact you indicating where to submit the collected data.***

*Important: the time expended is collected by teams and calculated in person-hours. For example, if 3 people participated in a meeting for 2 hours, then the expended time is 6 hours.*

*For assignment 3, you should also collect this information:*

***1) How many person hours did you dedicate to Assignment3?***

***a) How many person hours of Assignment 3 did you use for communication? Split the answer in two categories:***

***I. Communication with members of the same team (located in the same university)***

***II. Communication with members of other teams (located in other universities)***

***b) How many person hours of Assignment 3 did you use for development of the assignment result (preparing the documents, answering questions, writing documents, reading documentation, etc)?***

2) From question 1.a):

a. How many hours were used for voice communication?

b. How many hours were used for other way of communication such as e-mail, forums,, etc. ?

c. How many hours did you use for face-to-face meetings?

3) How long did you have to wait for a reply from the other team? Indicate best case, worst case and average in hours.

## 2. Reading Assignment

Read the paper:

Martin Nordio, Roman Mitin, Bertrand Meyer, Carlo Ghezzi, Elisabetta Di Nitto and Giordano Tamburelli: *The Role of Contracts in Distributed Development in Proceedings of SEAFOOD 2009 (Software Engineering Advances for Offshore and Outsourced Development)*. 2009.

[http://se.ethz.ch/~meyer/publications/tools/contracts\\_seafood.pdf](http://se.ethz.ch/~meyer/publications/tools/contracts_seafood.pdf)

## 3. API

**Conflicts:**

**If you get a SVN conflict in the project (source code), you should store the two versions of the file generated by SVN. Christian will tell you where to commit these files.**

*Before starting the implementation, teams have to define the common API of the system. The API has to be written in Eiffel using design by contract<sup>1</sup>. Use contracts to improve interface specifications by providing meaningful pre-, post-conditions and invariants. The API in the form of Eiffel classes has to be added to the project at:*

[https://svn.origo.ethz.ch/dose2011/src/group\\_n](https://svn.origo.ethz.ch/dose2011/src/group_n)

where n is your group number.

**Make sure that all teams in your group agree on the interfaces defined by the contracts.**

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<sup>1</sup> See [http://en.wikipedia.org/wiki/Design\\_by\\_contract](http://en.wikipedia.org/wiki/Design_by_contract)  
[http://www.eiffel.com/developers/design\\_by\\_contract.html](http://www.eiffel.com/developers/design_by_contract.html)