Lab 1: Weather Mapping System (WMS)-Use Case View

In this lab session you'll start the analysis of the Weather Mapping System (WMS). The requirements of WMS are summarized in a separate file (wmsReq05.pdf).

A. Use Case Modeling

1. Identify the actors involved in this problem, create them and provide appropriate documentation using Rational Rose. The documentation for an actor is a brief description that should identify the role the actor plays while interacting with the system. (20%)
2. Evaluate the needs that must be addressed by the system, and based on this information, identify the use cases for this problem. Create the use cases and provide appropriate documentation using Rational Rose. The documentation for a use case is a brief description that states the purpose of the use case in few sentences, and gives high-level definition of the functionality provided by the use case. (20%)
3. Create the main use case diagram in Rational Rose, by putting together the use cases and actors identified previously. Complete the diagram by defining and creating appropriate relationships among the actors and use cases involved. (10%)

B. Risk Analysis

1. One of the most important risks that the development of the weather mapping system is facing is *Change management*; failure to handle properly for instance changes in the product requirements may lead to the overall project failure. Identify using a cause-effect (sub) tree the risks hierarchy that may lead to the materialization of this risk. Describe these risks and corresponding reduction measures by providing a risk registry. (30%)
2. Not all use cases are architecturally significant. Only critical use cases that carry the most important risks, or the quality requirements or key functionalities are eligible for the architecture definition. One such use case encompasses functionality for collecting data from remote sources: we call it *Collect data*. Based on the system requirements, motivate briefly how the *Collect data* use case relates to the *Change management* risk specified previously. Provide the flow of events for *Collect data* use case. The flow of events is a description of the events needed to accomplish the required behaviour of the use case. The flow of events is written in terms of what the system should do, not how the system does it. Link the flow of events document to the use cases in your Rose model. (20%)