

Lab 3: Implementation, Process, and Deployment Views for the Weather Mapping System

A. Process and Deployment Views

After studying the subsystems defined for the problem, examining existing hardware, and estimating the load on the system during normal operation, the architecture team decided that they will need seven processors for the system: two for the system operators to access the system, one for the database, one for the data processing activities, and three for data sources. The data source processors are located at the weather stations: one processor per station (e.g. we assume that there are three stations).

1. Identify the runtime entities (e.g. process, thread etc.) involved in the *Collect data use case* and provide a corresponding class diagram showing the relationships among them using Rose (use suitable stereotypes). 30%
2. The deployment view of architecture involves mapping software to processing nodes: it shows the configuration of run-time processing elements and the software processes living in them. Create using Rose the deployment diagram for the WMS system. 30%

B. Implementation View for WMS

The architecture team decided that the classes encapsulating the functionality of weather data acquisition instruments would be designed as DLL (Dynamic Loadable Library). This allocation was chosen in order to anticipate future change of the weather instruments. By making them libraries, only the libraries would have to be replaced in case of change.

1. Create using Rose a UML component diagram depicting the executable release for the classes participating in the *Collect data* use case. A release is a relatively complete and consistent set of artifacts delivered to an internal or external user. A release focuses on the parts necessary to deliver a running system. 40%