

Your Name and organization: Laura Krumina, Latvian Environment, Geology and Meteorology Centre

Organizational Context Analysis

The mission of your organization and how training contributes the mission

Latvian Environment, Geology and Meteorology Centre (LEGMC) is a national meteorological and hydrological service. The main activities of the Centre from this point of view are:

- development and maintenance of environmental monitoring system in line with national and European policy needs, international recommendations and guidelines;
- reporting on meteorological, hydrological phenomena, warnings of dangerous and natural disasters, weather and hydrological forecasting;
- management of meteorological data, maintenance of databases on water resources and inland water quality.

Realization of those functions on a high level according to ISO 9001:2008 Quality Management System's standards and international standards requires continued training of the specialists and competence maintenance and assessment.

Stakeholders

- *Who are your primary and secondary stakeholders?*
- *What audiences of learners do you serve?*

The primary stakeholder is the Ministry of Environmental Protection and Regional Development. The main secondary stakeholders are the State Fire and Rescue Service (under the Ministry of the Interior), the Latvian Air Traffic (under the Ministry of Transport) and the National Armed Forces (under the Ministry of Defence), but other clients and public can be mentioned here as well.

The primary audience for training are general, marine and aeronautical forecasters and hydrologists, but periodically other specialists involved in climatology, monitoring, geology and water management might be involved according to the topic of the training. It is assumed that the primary audience have knowledge and practical skills in working with various observations, NWP models, different data formats and sources, and have theoretical and practical skills in producing a short- to medium-range forecast. It is assumed that the secondary audience are aware of different sources of observation data available and their potential applications.

How you promote your education and training services

- *Strategies you use internally and externally to promote your services within and outside your organization*

Education and training is one of the cornerstones of the organization of work in the Forecasting Department of LEGMC. In order to meet local and international requirements for qualitative realization of delegated functions, education and training under the conditions of limited resources is divided in two parts:

- 1) internal training activities in the Forecasting Department and within LEGMC based on the Annual Training Plan,
- 2) international training – online and classroom training courses on basic topics like satellite and radar meteorology, NWP and other.

For the promotion of education and training Annual Training Plans are developed. All staff of the Forecasting Department is involved in realization of the training plan – preparation of lectures and case studies, weather simulator training and self-studies. These activities are a part of competency maintenance process and the individual results showed by the specialists represent 50% of the total competency re-assessment. The other 50% of the re-assessment of competency consist of an assessment at the workplace, interview and evaluation of performance. In this way, a forecaster or hydrologist is involved and motivated in undergoing the training and developing their skills and expertise continuously.

Factors causing change in your organization

- *What political, economic, social, and technological changes determine what your organization will be doing in the near future?*

Political:

- WMO competency and qualification standards for aeronautical meteorological personnel, as well as recommendations for marine and PWC forecasters;
- EU regulations to set up a single market for air transport in Europe, which leads to cooperation of neighbouring countries and organization of FABs.

Economical:

- International, national and internal pressure to reduce costs and to increase efficiency.

Social:

- Process of change of generations in our department.

Technological:

- Changes associated with more intensive use of NWP data (higher resolution models, ensemble data) are expected during the following years.
- In the time period of 2-3 years LEGMC is planning to change meteorological radar technologies from single to dual polarization, which will significantly influence the everyday work of our forecasters.
- New hydrological forecast and warning system will be introduced in 2016.

Trends in education and training the impact you

- *Which trends are you adapting to or implementing for how you conduct training?*

Forecasters and hydrologists actively participate in various international online events like Eumetcal Training Courses, EUMeTrain Event Weeks, Monthly Weather Briefings etc. We use this opportunity more and more actively during last years, because as a small institute we do not have the possibility to maintain a group of specialists dedicated to education and delivering training. The topics associated with meteorology, oceanography and hydrology are weakly covered in the national universities as well.

At the end of March 2015 we are going to use a weather simulator as a training tool for the 1st time in the Forecasting Department. We are planning additional weather simulator exercises in the second part of 2015 and we are also planning to use a weather simulator exercise as one of the component tools for the competency assessment in 2016.

We are also interested in starting to use the Moodle learning platform during the following years for the development of an internal training platform and collection and management of the available training materials.

Your strategic learning plan

- *Do you have a strategic learning plan? If so, share how it describes your strategy for meeting organizational goals.*

1) Training of new staff:

Due to local specialties the training of new forecasters and hydrologists is performed at LEGMC by using available training materials and resources and involving local expert. A Training program based on WMO Guidelines for the Education and Training of Personnel in Meteorology and Operational Hydrology has been developed and implemented in the Forecasting Department.

2) Competency assessment and maintenance:

In the Aviation Forecasting Division the 1st stage of competency assessment process was performed in the end of 2013. Competency assessment of general and marine forecasters in the Hydrometeorological Forecasting Division is planned at the end of 2015. It will be based on the procedures previously used in the Aviation Forecasting Division. Competency assessment for hydrologists is planned in 2017.

The process of continuous maintenance and increasing of competency was started in 2014. It is based on internal training activities in the Forecasting Department and within LEGMC, self-studies together with other activities like participation in international training courses, developing cases studies and weather simulator training. It is a three-year cycle, but based on Annual Training Plans in Hydrometeorology for the Forecasting Department.

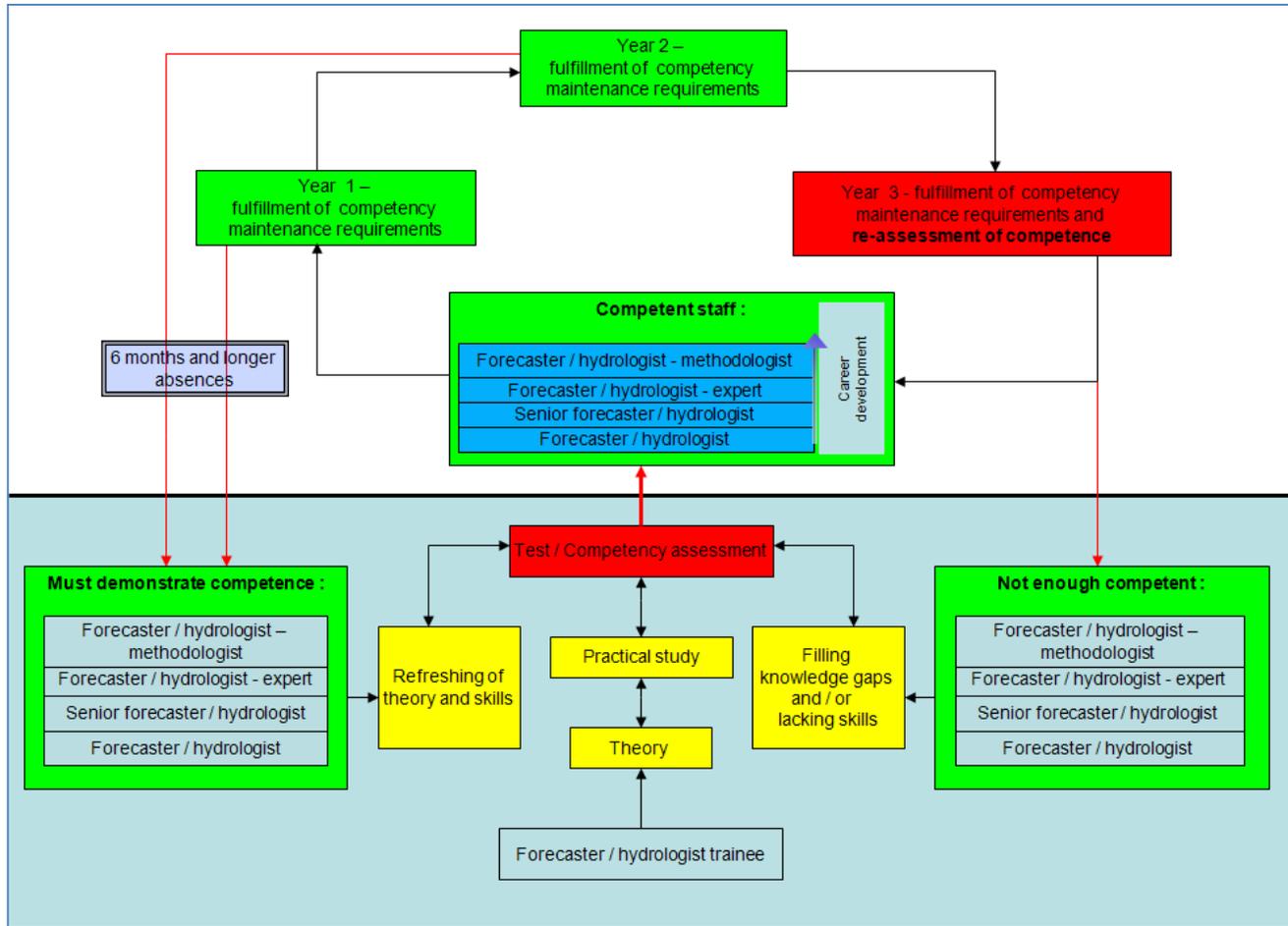


Figure 1. Training and competency assessment scheme in the Forecasting Department

Facilities and technologies

- What key facility and technological decisions have you made recently? Are they delivering the benefits anticipated? Why or why not?
 - What new changes in facilities or technologies do you anticipate making in the near future?
- In the meteorological branch a new forecaster's workstation SmartMet was introduced almost three years ago – this led to major changes in the operational work that had been very much different during the past few decades. Because of the successful implementation and use of these workstations, we are not expecting other significant changes for the operational forecasters during the following years.
 - Changes associated with more intensive use of NWP data (higher resolution models, more ensemble data) are expected during following years.
 - In the time period of 2-3 years LEGMC is planning to change meteorological radar technologies from single to dual polarization – additional training of staff will be required.
 - New hydrological forecast and warning system will be introduced in 2016 – this will lead to significant changes for operational hydrologists and of course will require appropriate training to use the new tools, NWP data and to find the best way for delivering information (forecasts and warnings) to the public and customers.

How do you ensure the quality of your services?

- *List the procedures you have in place for quality assurance.*
- ISO 9001:2008 Quality Management System is implemented and LEGMC is certified in this respect. A continuous verification and analysis of forecasts and warnings is done.
- We use annual questionnaires and organize meetings with the most important customers in order to discuss the main issues and monitor customers' satisfaction.
- Last year we introduced an evaluation of the local training events with respect to improvement in both the individual contributions of the staff involved in training and the training activities in general.

Example