



# Deliverable D2.2 Summary

The main objectives of this document are to describe the proposed learning resources for the virtual labs and to define and describe the remote experiments. The aim is to create accessible learning resources for students from different educational levels to access the specialised lab-infrastructure and virtual environments, which enable experiments to be carried out and theoretical concepts that are studied in the class to be demonstrated.

In this context, the virtual labs will provide the following features:

1. A visual software simulation and learning environment that users can use across different programs and courses, anytime and anywhere.
2. An expandable set of virtual experiments, learning resources and different assessment activities.

With these strong premises, the definition and creation of the interactive multimedia content for the virtual labs become very important in order to engage all advantages mentioned above. In this document, the development of the multimedia content is structured under four main stages:

1. Instructional Design Stage – presents the sets of relevant subjects, virtual lab platforms, and curriculum analysis, defines and describes the set of virtual experiments/scenarios that are developed and deployed in the NEWTON's platform;
2. Graphic Design Stage – develops the graphic elements for the interactive learning resources based on the storyboards that are presented in the instructional design stage;
3. Programming Stage – encompasses the software development process based on the previous mentioned stages;
4. Testing Stage – implies the development and the deployment testing: the development testing of the learning resources permits to each partner to test its own product independent of the NEWTON platform; the deployment testing is the phase where the developed learning resources are tested together in the NEWTON platform.

The virtual experiments and their scenarios that are developed as part of the NEWTON project are detailed in this document. The characteristics of these scenarios as well as innovative technologies being used are also addressed. Each developed virtual experiment is detailed by taking into account the description of activities and learning resources, the set of working instructions and the educational content by using edifying graphical print shoots.