

Object: **Invitation to participate/collaborate in the RIALE–EU Project**

Dear Professor, Dear Headmaster,

As head of the project, please allow me to introduce the RIALE-EU project (**Remote Intelligent Access to Lab Experiments in EUrope**) to you. The project was developed by the Educational Technology experts of the High Performance and Quantum Computing, Biosciences and Advanced Studies of CRS4.

RIALE is an educational platform that brings together schools and high level technical-scientific labs that are not normally accessible to schools, but which activities can be linked to the school curriculum. Our targets are junior high and high school students. The project promotes dialogue between the scientific community and schools, encourages students to use the scientific method, facilitates students' orientation activities for the choice of their study pathway.

For this school year, 2024/2025, we aim to extend the project from Sardinia where it was born, to mainland Italy and to Europe. Therefore, RIALE becomes **RIALE-EU**. In fact, we want to give Italian and European **researchers** the opportunity to tell about their research field from their own perspective. We also want to give more **schools** the opportunity to participate in the project, extending the project from Sardinia to mainland Italy and Europe.

The project is developed in two main steps: the **synchronous** (live) and **asynchronous** sessions.

Synchronous sessions: through the platform, student can remotely access the hosting laboratory and watch live the lab researcher's actions while carrying out the experiments; interact with her/him through video conferencing.

Asynchronous sessions: through the **Timeline**, students can access a video registration of the whole experiment as well as additional interactive educational objects that will enhance their understanding of the experimental steps. Teachers are invited to use the Timeline and as an additional resource for their teaching, and to personalise and enrich it with their own documents.

- To learn more about CRS4: <https://www.crs4.it/> and https://www.crs4.it/repository/documents/press/media-kit/the_future_is_close.pdf
- To learn more about the project: <https://www.crs4.it/riale/>
- To find out which hosting laboratories are presently involved in the project and to access the catalogue of experiments: <https://riale.ideab3.it>.

Experiments found in the **catalogue** cover a wide range of topics such as Genomics and DNA sequencing; Physics; Neuropsychopharmacology, Translational models and behaviour analysis, Neuromorphology; Food analysis and testing; Microbiology; Biotechnology; Renewable Energy; Marine biology; Mineralogy, etc.

Objectives of the project:

- To promote university orientation for young people attending secondary schools, through the implementation of a school-work training.
- To enable students to explore the world of scientific research.
- To promote dialogue between the scientific and educational communities.
- To promote the scientific excellence of one's own territory among schools and make the progress of research progress known even in remote territories.
- To support educational continuity through remote access to laboratories in different parts of Italy and Europe,
- To stimulate students' personal growth by helping them develop the awareness of belonging to the European Community and of being European citizens that have a strong possibility to continuing their studies in an international scientific community.

If your school wishes to participate in the project, an indirect benefit will be to create a network in which it will be possible for your school to compare itself with other schools nationally and internationally. If You be interested in learning more about the RIALE project, I would be glad to organize a videoconference in which RIALE's methodological approach will be illustrated and a demo shown.

Carole Salis
Head of the project
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Enc. information sheet about the project

The RIALE-EU project is financed by the Development and Cohesion Plan of the Autonomous Region of Sardinia. It is carried out with the financial support and collaboration of the Sardinian Department of education ("Servizio Istruzione della Direzione Generale della Pubblica Istruzione dell'Assessorato della Pubblica Istruzione, Beni Culturali, Informazione, Spettacolo e Sport della Regione Autonoma della Sardegna") and the Sardinian Regional Agency for Research and Technology Development "Sardegna Ricerche".



RIALE-EU

Remote Intelligent Access to Lab Experiments in EUrope (Accesso Remoto Intelligente ad Esperimenti di Laboratorio in EUropa) Settore Studi Superiori e Modellistica Computazionale - CRS4

RIALE-EU is a **didactic platform** that gives teachers and students remote access (live and asynchronously) to experimental activities of **technical and scientific laboratories** of universities, research institutions and schools.

During the **live sessions**, teachers and their classes participate to an experiment carried out by the lab researcher or lab technician. The **remote interactions between classes and the domain expert** happen thanks to the video cameras and the sensors/actuators installed in the hosting laboratory. For schools, the basic equipment required for sessions to take place are: one or more computers, a broadband connection (min. 4Mb/s upload and download per computer), a video projector, a multimedia interactive whiteboard and a video conferencing software.

The **asynchronous sessions** allow users to access and use the content of an **Interactive Timeline** (TL) that teachers can customise by uploading additional teaching material (documents, tests, videos, etc.). At leisure, students can explore the TL to view the recording of the live session they attended and use the didactic contents necessary to gain an understanding of the steps of the scientific process investigated.

OBJECTIVES

- Enabling students to explore the world of **scientific research**;
- Fostering the **dialogue** between the scientific and school communities;
- Experimenting with an **innovative teaching environment** aimed at developing technical and scientific knowledge;
- Facilitating students's **orientation**;
- Promoting **the local** scientific excellence in schools of **the area**;
- Supporting the **continuity in education** through remote access to laboratories in situations of confinement measures.



Fig 1: Timeline with video of the experiment and related educational contents

HOW DOES THE RIALE-EU EXPERIMENTATION TAKE PLACE?

For teachers:

- Teachers use the Timeline master to consolidate the scientific issues;
- CRS4 instruct teachers on the use of the RIALE-EU platform.

Live sessions

- Happen during school hours;
- Consist in the live participation to the laboratory experience carried out by the research/technical staff of the hosting laboratory. Live sessions last approximately 60 minutes.

Continuation of activities – the asynchronous sessions

- Teachers carry on activities with their students by accessing the Timeline asynchronously;
- Teachers can also use the didactic material found on the Timeline with other classes that have not experienced a live session.

FUNDING

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