Track Your Atmosphere: Enhancing Digital and Environmental Competences by Developing Open Educational Resources for Technical VET.

Conny-Hendrik Kempe-Schälicke (1), Boris Reusch (1), Britt Hennig (1), Laurent Verdier (2), William Metref (2), Dominique Joly (2), Amelio Incollingo (3), Pasquale Longo (3), Fadwa Alshawaf (4), Tzvetan Semeonov (4), Jens Wickert (4), Umberto Riccardi (5), Giuseppe Brandi (6), Mario Dolce (6), Diana Duilio (6), Claudio Martino (6), and Umberto Tammaro (6)

(1) Lise-Meitner-Schule, Berlin, Germany., (2) Lycée Saint Cricq, Pau, France. , (3) Istituto Tecnico Industriale Statale Leonardo da Vinci, Naples, Italy., (4) Helmholtz Zentrum Potsdam Deutschesgeoforschungszentrum, Potsdam, Germany., (5) University "Federico II", Naples, Italy., (6) Istituto Nazionale di Geofisica e Vulcanologia, Italy (umberto.tammaro@ingv.it)

In the framework of the ERASMUS+ program Key Action "Cooperation for innovation and the exchange of good practices" with an Action Type "Strategic Partnerships for vocational education and training" of, our project Track Your Atmosphere (TRYAT) was approved in august 2017 and is co-funded by the European Union

The projects total duration is 35 months and the kick-off meeting was held in Berlin on 18-20 October 2017. The participants to the project are teachers, researchers and the students (about 400) from three vocational schools and Research/University Institutes in Italy, France and Germany.

TRYAT combines Global Navigation Satellite Systems (GNSS) and monitoring of environmental data for Vocational Education and Training (VET). Permanent high-precision GNSS stations currently operate for geodetic purposes, e.g. earthquake and volcano monitoring. We want to capitalize and promoulgate the fact that they also offer a tool for a reliable remote sensing of atmospheric water vapour. Due to the presence of water vapour in the troposphere the satellite signal is delayed. The tropospheric delay of the GNSS signal is nearly proportional the quantity of water vapour. This allows the computation of the precipitable water which plays a key role in weather forecast and prevention from extreme weather events. It also provides highly valuable information on climate change, water vapour being an important greenhouse gas.

Our project includes the acquisition of both atmospheric and GNSS data so that students become part of the scientific high precision measurement campaign. In parallel they also build their own low cost GNSS receivers and evaluate and interpret the collected data. The project is thus building bridges from forefront research to practical activity-oriented learning and from scientific measurement and analysis to open knowledge citizen science.

We focus on a highly relevant and topical technology, GNSS that has become part of our daily lives but is not yet included to school curricula in a systematic way. We think that the combination of a modern technology, present in every smart phone, and the use of real-time environmental data obtained for present research purposes are highly attractive for both students and teachers.

The objectives of our project are aimed to empower VET learners in the fields of physics, electronics, electrical engineering, geo- and environmental engineering and ICT by means of an interactive learning platform and innovative learning materials.

The project includes five intellectual outputs: an online learning platform, three learning units (Open Educational Resources, OER) with a starter kit and a series of short educational films.

Through the OER and especially the learning web platform the outcomes of the project will be disseminated Europe-wide– this hopefully will lead to an intensive exchange and discussion within the communities of teachers, instructors and companies that provide professional training as well as implementation of the contents in the national curricula.