E-Collaboration for Earth Observation (E-CEO) with the example of Contest #3 that focuses on the Atmospheric Correction of Ocean Colour data

Samantha Lavender (1), Fabrice Brito (2), Christina Aas (3), Francesco Casu (4), Rita Ribeiro (5), and Jordi Farres (6)

(1) Pixalytics Ltd, Plymouth, United Kingdom (slavender@pixalytics.com), (2) Terradue UK Ltd, London, United Kingdom (fabrice.brito@terradue.com), (3) Science and Technology AS, Oslo, Norway. (aas@stcorp.no), (4) IREA institute, CNR, Napoli, Italy. (casu.f@irea.cnr.it), (5) UNINOVA, FCT/UNL, Monte da Caparica, Portugal. (rar@ca3-uninova.org), (6) ESA/ESRIN, Frascati, Italy. (Jordi.Farres@esa.int)

Data challenges are becoming the new method to promote innovation within data-intensive applications; building or evolving user communities and potentially developing sustainable commercial services. These can utilise the vast amount of information (both in scope and volume) that's available online, and profits from reduced processing costs. Data Challenges are also closely related to the recent paradigm shift towards e-Science, also referred to as "data-intensive science'.

The E-CEO project aims to deliver a collaborative platform that, through Data Challenge Contests, will improve the adoption and outreach of new applications and methods to processes Earth Observation (EO) data. Underneath, the backbone must be a common environment where the applications can be developed, deployed and executed. Then, the results need to be easily published in a common visualization platform for their effective validation, evaluation and transparent peer comparisons.

Contest #3 is based around the atmospheric correction (AC) of ocean colour data with a particular focus on the use of auxiliary data files for processing Level 1 (Top of Atmosphere, TOA, calibrated radiances/reflectances) to Level 2 products (Bottom of Atmosphere, BOA, calibrated radiances/reflectance and derived products). Scientific researchers commonly accept the auxiliary inputs that they've been provided with and/or use the climatological data that accompanies the processing software; often because it can be difficult to obtain multiple data sources and convert them into a format the software accepts. Therefore, it's proposed to compare various ocean colour AC approaches and in the process study the uncertainties associated with using different meteorological auxiliary products for the processing of Medium Resolution Imaging Spectrometer (MERIS) i.e. the sensitivity of different atmospheric correction input assumptions.