

Research Data Alliance's Interest Group on “Weather, Climate and Air Quality”

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More than ever in the history of Earth sciences, scientists are confronted with the problem of dealing with huge amounts of data that grow continuously at a rate that becomes a challenge to process and analyse them using conventional methods. Data come from many different and widely distributed sources, ranging from satellite platforms and in-situ sensors to model simulations, and with different degrees of openness. How can Earth scientists deal with this diversity and big volume and extract useful information to understand and predict the relevant processes?

The Research Data Alliance (RDA, <https://rd-alliance.org/>), an organization that promotes and develops new data policies, data standards and focuses on the development of new technical solutions applicable in many distinct areas of sciences, recently entered in its third phase. In this framework, an Interest Group (IG) comprised of community experts that are committed to directly or indirectly enable and facilitate data sharing, exchange, or interoperability in the fields of weather, climate and air quality has been created recently. Its aim is to explore and discuss the challenges for the use and efficient analysis of large and diverse datasets of relevance for these fields taking advantage of the knowledge generated and exchanged in RDA. At the same time, this IG intends to be a meeting point between members of the aforementioned communities to share experiences and propose new solutions to overcome the forthcoming challenges.

Based on the collaboration between several research meteorological and European climate institutes, but also taking into account the input from the private (from the renewable energies, satellites and agriculture sectors for example) and public sectors, this IG will suggest practical and applicable solutions for Big Data issues, both at technological and policy level, encountered by these communities.

We intend to present the IG, its objectives and goals and the first initiatives envisaged during its creation phase (consultative process of the community). Moreover, we will consider the scientific questions highlighted in this phase: preselection of indicators and diagnostics, challenges associated with the increase in time and spatial resolution, importance of “bringing the compute to the data” and future actions. This will be also an occasion to meet new members interested in participating in the IG.