RDA Interest Group Draft Charter

Name of Proposed Interest Group: Weather, climate and air quality

Introduction *(A brief articulation of what issues the IG will address, how this IG is aligned with the RDA mission, and how this IG would be a value-added contribution to the RDA community):*

In a field where the amount and the data sources increase exponentially, it becomes critical to find efficient solutions at a community level to address problems such as storage, indexing, metadata, sharing, or analysis. The global objectives of this Interest Group will be to explore and discuss the challenges for management, efficient analysis and dissemination of large and diverse datasets generated by the weather, climate and air quality communities.

These communities follow one of the main ideas of data sharing of RDA as most of the datasets used are completely open and freely available. Most of the concepts and problems that this IG aims to address correspond to classic RDA issues (metadata, data standards, efficient sharing, etc...) but as these communities already have rules and policies structured in terms of standards and data portals, they need some advanced community specific solution to these issues.

These communities, which are not (yet) adequately represented in RDA, are one of the biggest data producers in terms of volumes stored (for example, the CMIP6 project is planned to generate 5PB of data and this is only one example of a project for one community), have a range of users well identified and, therefore, can bring an important added value to the work of the RDA community.

User scenario(s) or use case(s) the IG wishes to address *(what triggered the desire for this IG in the first place):*

With the increase of the data volumes and sources, scientists and users working with weather, climate and air quality data can face issues such as having data "stuck" locally and difficult to share among institutions, data repositories too big to be indexed/explored or softwares demanding unrealistically large amounts of memory to efficiently compute diagnostics, metrics and products (post-processing operations sometimes lasting more than the simulation itself). This IG should discuss and propose solutions to help tackling these issues.

Objectives *(A specific set of focus areas for discussion, including use cases that pointed to the need for the IG in the first place. Articulate how this group is different from other current activities inside or outside of RDA.):*

Based on a collaboration between several research meteorological and European climate institutes and taking into account inputs from the private (renewable energy, satellite and agriculture sectors, for example) and public sectors, this IG will suggest practical and applicable solutions for data issues encountered by these communities, both at the technological and policy level.

As mentioned before, advance standards and technologies are already used in the weather, climate and air quality communities in terms of data storage, sharing, metadata,... However, this interest should look for more advanced solutions (using the work of other IG and WG such as the array database WG or the metadata IG). Of course, solutions and discussions found in this IG could serve the other RDA groups.
One of the objectives of this IG is also to use the political power of RDA to push for solutions at global (community) level.

Participation *(Address which communities will be involved, what skills or knowledge should they have, and how will you engage these communities. Also address how this group proposes to coordinate its activity with relevant related groups.):*

The target audience of this IG is of course representatives of the different entities of the weather, climate and air quality communities. An example of the targeted audience can be found in the list of participants to the Birds of a Feather session where the creation of this IG was discussed at the last RDA plenary in Tokyo (April 1-3 2016). This session was attended by people from the community with different profiles: from software and data engineers to pure scientists and decision makers.

Outcomes *(Discuss what the IG intends to accomplish. Include examples of WG topics or supporting IG-level outputs that might lead to WGs later on.):*

The outcomes can be summarized as:

- identification of the main issues and bottlenecks the community is confronted to in terms of data management
- proposal of enhancements to the data centers and researches that can improve the usability of the data
- proposal for efficient data analysis tools enhancements

Mechanism *(Describe how often your group will meet and how will you maintain momentum between Plenaries.):*

A mailing list has been setup so that people from the IG can interact. To subscribe, interested parties can send an email with the subject "Subscribe" to earthsciences-rda-ig@bsc.es. Apart from these discussions by email, regular (every 3 months) teleconferences to follow-up the advancements of the work and/or discussions will be set up by the IG coordinators.

Timeline *(Describe draft milestones and goals for the first 12 months):*

After the first six months of "official life" of the IG, a list of relevant actors from the community that have an involvement in the IG can be provided (MS1: definition of the ecosystem and state of the art targeted in the IG). After the first 12 months, a list of issues and specific problems, using illustrative examples from the community, will be provided, leading to an eventual WG born from this IG (MS2: definition of the precise problems of the community and list of actors to solve them)

Potential Group Members *(Include proposed chairs/initial leadership and all members who have expressed interest):*

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