

Interactive comment on “A web service based tool to plan atmospheric research flights” by M. Rautenhaus et al.

Anonymous Referee #1

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The article can be accepted as it is, according to the general good-excellent quality. The detailed review comments below are proposals to improve the quality still, to make some clarifications and give more detailed information.

The review is concerned with technical issues of the data, its handling and visualisation. It does not deal with aviation-specific topics like flight-planning methods. The meteorological content, e.g. quality and aptness of the data is not considered.

The article proposes a very valuable tool for the described purpose, where a quick reaction is needed. The arguments brought forward in the abstract are convincing, the goals described in the abstract are met. The case study illustrates the usability and the value of the tool.

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There are two principal deficits, which are not within the responsibilities of the authors, but hamper the widespread usage: there are not too many numerical forecast data accessible by WMS. The ECMWF plays a commendable role. Second, the display of data which are not directly map-oriented, e.g. vertical cross sections and time series, is not covered by OGC standards yet. Efforts are currently under way to overcome this deficiency, as is mentioned. These general remarks give no reason to change the article. The article is capable to support the general OGC visualization standards and data access mechanism and to remedy existing deficits. The extension of the standard is justified.

The GUI of the application seems to be a good approach. Not all GUI elements / widgets are explained. E.g. can the interaction and definition of waypoints be done in a graphical interactive way?

A time series view example is not included in the case study. For such a view, there is also no OGC standard yet. It is principally interesting, what solution was found for this case and whether the solution could be generalized.

Detailed remarks:

Page 2126, line 15: 2008 was, as correctly mentioned, a workshop on the topic. It could be mentioned there were 2 more workshops in this series since then, 2009 (UK Met Office) and 2010 (Meteo France, Toulouse). Reading further, I note this is mentioned later in section 2.3.

Page 2131, line ~18: The mentioned problems are correct. Perhaps it would be appropriate to go into a bit more detail, since the dimensions time and a vertical coordinate exist in the standard, but not in a sufficient way. As the authors know, forecasts have more than one time dimension, and the vertical coordinate needs not to be metric. I note this is explained in more detail later.

Section 2.3, page 2131, line 3: - this remark is for clarification only, no proposal to

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change the text: It is mentioned that the NinJo application is extended to support OGC standards. This is correct, NinJo meanwhile has a layer which is able to visualize data from a WMS (no server functionality) .

Section 3, page 2132, 1st chapter: for IT personnell and developers, it would be of interest, why the authors have chosen Python and developed the SW (as it seems) from scratch. Why didn't they use existing SW, as mentioned a few lines above, or other (open source) SW as MapServer or GeoServer? The same holds for the graphical libraries.

Section 3, page 2134, line ~3: The description of the OGC standards deficit w.r. to time is OK and the reaction of the client justified. Wouldn't it be possible to make a guess and assume a kind of nearest time, if the particular parameter "INIT_TIME" is not set correctly, rather than throw an exception? E.g. use the specified "TIME" and take the latest model-run?

Page 2134, line 25: what happens, if only 2 coordinates (4 values) are defined? Is also a line along a great circle calculated? One might wish to define a straight line. It is clear that a specific interpretation is required here. One might have a situation where no interpolation is desired.

Section 3.4, page 2139, line ~10: the interoperability is not really fully given, as the arrows may indicate, in both directions. The text explains this correctly, it is true for the top view only. The side view can probably not extracted by a third party service, since it is non-standard.

Section 5, page 2143 (outlook): it would be interesting to know whether grid data of the VACC (Volcanic Ash Advisory Center, London), can be dealt with, and if, what are the procedures or boundary conditions (e.g. grib format or csv?).

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