

## Reply to RC1: Anonymous Referee #1

This is an excellent paper reporting on the experience of implementing XIOS, an IO server into the ECMWF integrated forecast system. The paper has a good introduction and motivation with well presented results and discussion. I can't remember the last time I read something on this sort of topic which was as easy to consume. I find myself with little to contribute in terms of suggested modifications!

I recommend publishing as is, but recommend addressing a few minor points during the final submission process. That said the authors and editors might consider whether section 6 and the associated figures are really necessary? It's not really about choices around XIOS, but about the difference between GRIB and NetCDF ... it's a different topic ...

Reply: We are grateful for the constructive and insightful comments and we have addressed all the specific issues raised by the reviewer. The original reviewer comments are colored in blue.

We believe a proper validation of the model output is critical when adopting a new I/O infrastructure. When comparing the XIOS output -restricted to NetCDF format- with the traditional scheme -restricted to GRIB format- one unfortunately cannot escape the details of the file formats, different compressions, and its implications for the validation procedure.

My list of minor points:

- obsolete not obsolescent (in the abstract, it is correct in the text)

Reply: This is now corrected.

- I would recommend adding the word "existing" before "IFS I/O server" at the end of page 1.

Reply: We prefer to add the word "operational" before "IFS I/O server" as described in the second paragraph of page 1 to keep the descriptions consistent.

- line 5 page 2. I would discuss increasing spatial resolution, not spatio-temporal resolution (even if the timestep has changed).

Reply: This is now corrected.

- For the caption of figure 2, I think it would be helpful to expand a little bit more about the meaning of the axes in this trace. While it is easy to infer, it takes a few minutes for those who are not familiar with the output. I realise this is discussed further in B1, but frankly most readers might not get to the appendix!

Reply: We have added a brief explanation about the meaning of the trace axes.

- the first sentence of the last para of page 9 is hard to construe given the previous para talks about "the three tests" and then this para talks about "the three MIP configurations). After two or three reads and a look at the table I understood it, but it could be cleaner.

Reply: We have fixed this by only using "configuration" instead of indistinctly using both "test" and "configuration".