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## Making ECMWF Open Data more easily accessible via cloud-based services

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The European Centre for Medium-Range Weather Forecasts (ECMWF) is moving gradually towards an open data licence, aiming to make real-time forecast data available under a full, free and open data license by 2025. The introduction of open data policies lead in general to an increase in data requests and a broader user base. Therefore a much larger community of diverse users will be interested in accessing, understanding and using ECMWF Open Data (real-time). While an open data license is an important prerequisite, it does not automatically lead to an increased uptake of open data. In order to increase the uptake of (open) data, Wilkinson et al. (2016) defined the FAIR principles, which emphasize the need to make data better 'findable', 'accessible', 'interoperable' and 'reusable'.

In 2019, we conducted a web-based survey among users of big Earth data to obtain a better understanding of users' needs in terms of the data they are interested in, the applications they need the data for, the way they access and process data and the challenges they face. The results show that users are in particular interested in meteorological and climate forecast data, but facing challenges related to the growing data volumes, the data heterogeneity and the limited processing capacities. At the same time, survey respondents showed an interest in using cloud-based services in the near future, but expressed the need for an easier data discovery and the interoperability of data systems. Moreover, an ECMWF supported activity that made a subset of ERA5 climate reanalysis data available to the user community of the Google Earth Engine platform, revealed that interoperability of data systems is a growing bottleneck.

Conclusions from both activities are helping ECMWF to define the way forward to make ECMWF Open Data (real-time) better accessible via cloud-based services. In this presentation we would like to share and discuss lessons learned to make open data more easily 'accessible' and 'interoperable' and the role cloud-based services play in doing so. We will also cover our future plans.