

The AENEAS survey of radio archives: use cases and user interface recommendations

The archive is one of the most important sub-systems in current astronomical facilities, e.g. it is the privileged interface used by Principal Investigators (PIs) to access and retrieve their own data. However, the traditional conception of archive as merely repository of raw observations needs to be rethought: new radio telescopes such as ALMA, ASKAP, LOFAR and MeerKAT (and, in future, SKA) deliver (or will deliver) up to several PBs per year, hence they are the first astronomical facilities at posing data challenges, not only in terms of storage and computing capabilities, but also in terms of scientific exploitation of such Big Data. In fact, astrophysics has been recently entered a golden age for multi-wavelength and multi-messenger capabilities, characterized by unprecedented levels of reusability of data products associated to a given observation. Thus, archive miners are now expected to play a considerably major role than they used to have in the past.

The goal of the H2020 AENEAS project is to develop a concept and design for a distributed, federated European Science Data Centre (ESDC) to support the astrophysical community at large (well beyond the traditional radio one) in exploiting the scientific capabilities of the SKA, included the creation of (science-ready) advanced data products. In particular, the task WP 5.2 focuses on user interfaces for data discovery, access, and retrieval for the ESDC. In this framework, we performed a survey of existing radio archives in order to identify gaps and deliver design recommendations to overcome the latter.

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