



Bridging EO Research, Operations and Collaborative Learning

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Building flexible and responsive processing and delivery systems is key to getting EO information used by researchers, policy agents and the public. There are typically three distinct processes we tackle to get product uptake: undertake research, operationalise the validated research, and deliver information and garner feedback in an appropriate way. In many cases however, the gaps between these process elements are large and lead to poor outcomes. Good research may be “lost” and not adopted, there may be resistance to uptake by government or NGOs of significantly better operational products based on EO data, and lack of accessibility means that there is no use of interactive science outputs to improve cross disciplinary science or to start a dialog with citizens. So one of the the most important tasks, if we wish to have broad uptake of EO information and accelerate further research, is to link these processes together in a formal but flexible way.

One of the ways to operationalize research output is by building a platform that can take research code and scale it across much larger areas. In remote sensing, this is typically a system that has access to current and historical corrected imagery with a processing pipeline built over the top. To reduce the demand on high level scientific programmers and allowing cross disciplinary researchers to hack and play and refine, this pipeline needs to be easy to use, collaborative and link to existing tools to encourage code experimentation and reuse.

It is also critical to have efficient, tight integration with information delivery and extension components so that the science relevant to your user is available quickly and efficiently. The rapid expansion of open data licensing has helped this process, but building top-down web portals and tools without flexibility and regard for end user needs has limited the use of EO information in many areas.

This research reports on the operationalization of a scale independent time series query API that allows the interrogation of the entire current processed Australian Landsat archive in web time. The system containerises data interrogation and time series tasks to allow easy scaling and expansion and is currently in operational use by several land management portals across the country to deliver EO land information products to government agents, NGOs and individual farmers. Plans to ingest and process the Sentinel 2 archive are well underway, and the logistics of scaling this globally using an open source project based on the Earth Engine Platform will be discussed.