



# Project Plan

<b>Project Title</b>	<i>Sentinel-2 Surface Reflectance – Alpha</i>
<b>Project Partners</b>	<i>Digital Earth Australia, Geoscience Australia, Murray Darling Basin Authority, Department of the Environment and Energy</i>

## Overview

<b>Abstract</b>	<p>Surface Reflectance refers to corrections applied to satellite data to account for variations caused by atmospheric properties, sun position and sensor view angle at time of image capture. This is undertaken to allow comparison of imagery acquired at different times, by different sensors, in different seasons and in different geographic locations, thus providing a richer and deeper pool of data for analysis. These corrections have been applied to all satellite imagery in the Landsat archive since 1987.</p> <p>Sentinel-2A and Sentinel-2B is a pair of an Earth observing satellites operated by the European Commission. Launched in 2015 and 2017, the satellites provide a combined 5-day observation cycle at 10 m resolution. This is a significant change from the ~25 m resolution and 16-day duty cycle of the USGS' Landsat program. Objects that are only noted by their presence or absence at 25 m (e.g. small structures and large trees), can be more readily identified at 10 m.</p> <p>The Sentinel-2 Surface Reflectance – Alpha project represents the formative piece of work being undertaken by DEA to deliver a surface reflectance product that is based on the Sentinel-2 satellites. It has been named the “alpha” project, as it will have specific limitations on its delivery time frame, with further capabilities to come through later pieces of work.</p> <p>The alpha project will focus specifically on the delivery of a near real time (NRT) output, in service of requirements identified within the Department of the Environment. This output is also expected to meet requirements identified by the Murray Darling Basin Authority.</p>	
	<b>Expected Business Use</b>	<p>DoEE                      Provision of imagery to support the monitoring of matters of national environmental significance</p> <p>MDBA                     Provision of imagery to support the detection of water in the landscape.</p>
	<b>Benefits</b>	<p>The overall benefit of establishing a Sentinel-2 Surface Reflectance collection is the improved resolution (10 m) and observation frequency (5-day revisit) of the analysis-ready data collection.</p> <p>More specifically, provision of an “Alpha” release of this information is expected to facilitate the rapid delivery of a first version of the surface reflectance product to allow for partner, and EO community consultation and allow for refinement of both the product and the delivery mechanism's available.</p>
<b>Users</b>	<p>At this stage, the intended users for the alpha release will be the two project partners, and more specifically, will be earth observation domain specialists within these partnership departments.</p>	
<b>Scale</b>	<p>Expected alpha delivery March 2018</p>	

## Schedule

	Task	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18
1	Addition of Auscophub L1C to datacube					
1.1	- Initial backlog included in datacube instance	x				
1.2	- On-receipt update to include new content		x			
2	Production of Sample Products					
2.1	- Sample of area of interest provided	x				
2.2	- Feedback from client received		x			
3	Back processing of Sentinel-2 archive to Alpha ARD					
3.1	- Addition of MODIS C6 to support BRDF post march 2017		x			
3.2	- Validate test products – incorporate feedback					
3.3	- Backlog processing initiated			x		
3.4	- Backlog processing complete				x	
3.5	- On-receipt processing established for new data incoming and ancillaries					x
4	Near Real time process established					
4.1	- Procure x1 MODTRAN license	x				
4.2	- Establish NRT production environment		x			
4.3	- On-receipt processing established for new data incoming					
4.4	- High availability system interconnection complete (isolated from NCI – ancillary and primary input data from alternate sources)			x		
5	Near Real Time delivery/distribution channel setup and running					
5.1	- NRT products available for download				x	
6	Next phase scoping activity				x	