Project Plan

Project Title	Geomedian-based Change Detection Phase 1 – Development of a Basic Change Detection Capability
Project Partners	Clean Energy Regulator

Overview

Abstract	The Clean Energy Regulator (CER) is responsible for the administration of a variety of environmental accounting schemes. Of interest to this first phase of work, is support for the administration of the Emissions Reduction Fund, specifically in the issuing of Australian Carbon Credit units (ACCU's) as they are applied for.

The ability to detect change in the landscape is essential for land accounting, environmental reporting and modelling applications, including modelling of climate change, erosion risk, natural hazards and carbon dynamics.

The objective of this first phase of the Change Detection project is to develop an operationally useful output that delivers simple change detection over project areas, in consideration of an appropriate time scale. |
| Expected Business Use | The primary business use for this product will be in support of CER as they discharge their responsibilities with respect to the administration of the Emissions Reduction Fund, specifically in the allocation of Australian Carbon Credit Units (ACCU's). |
| | Related Business Requirements: |
| Benefits | The project will deliver a scientifically rigorous method of detecting change in the landscape.

The comparison of historical seasonal composites with current data (most recent clear pixel and more recent seasonal composite) will provide the ability to identify and quantify change (magnitude and trend of deviation) from the geometric median or between geometric medians.

This comparison will provide an ability to quantify the degree of change occurring in locations of interest to the Clean Energy Regulator.

Geospatial analysis currently requires manual interrogation by the Clean Energy Regulator to determine if there are visual signs of land use change. Manually assessing all projects would require several months of dedicated staff time each year. With project numbers increasing each year and continuing to operate for between 25 and 100 years, the potential savings from the proposed landscape change detection project would be substantial. The possibility of achieving automated checks for all projects would also help reduce Emissions Reduction Fund risks and maintain the integrity of Australian Carbon Credit Units. |
| Users | At this stage, the users of the phase 1 deliverable would be limited to the project partner, CER and would be targeted for domain specialists. |
| Scale | Phase 1 to be completed Apr 2018 |
| High Level Deliverable | • Operationally effective simple change detection for project areas and relevant time series.
• Incorporation of the continental Geomedian and Standard Deviation composites into the Data Cube for use. |

Schedule

	Task	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18
1	Preparing the demonstration outputs using supplied areas of interest					
1.1	- Client provides valid areas of interest	X				
1.2	- Continental scale demonstration product developed	X				
	- Provide sample reports to client	X				
2	Client review and feedback		X			
3	Feedback/update to product					
3.1	- Workshops to gather feedback on the demonstration product and clarify requirements for phase 1			X		
3.2	- Update the product to include feedback where possible				X	
3.3	- Provision of a 2nd demonstration product (client reviewed requirements included)				X	
4	Provision of operationally effective simple change detection for project areas and relevant time series.					X
5	Integration of an operational, continental scale Geomedian and standard deviation composition in the Data Cube for general use					X
6	Scoping for future phases of change detection work			X	X	X