

# **UAV's, RPA's, Drones or ROA's - Whatever they are called, do they work and what can they do? A report on ACTFA project - Eye in the Sky, coming to a field near you**

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This paper will look at the preliminary results from the project across horticulture, cereal grains and sugar, the regulatory framework and how that might change as well as a snapshot of the current offering of UAV's to suit the agricultural industry. Drones are always in the news for all the wrong reasons but that could change if farmers take up the technology demonstrated in this project.

Three sites have been flown over both grain and horticulture so far with more planned. Initial results are promising but there are issues. While the plane and control systems worked extremely well, the ability of the software to generate useful data was disappointing. Several updates and a complete reprocessing operation have finally delivered the expected product for one brand.

The quality and appropriateness of the shipped software to perform satisfactorily for agricultural data requirements appears to be as least as important as the hardware so far.

The current regulatory requirements are fluid with CASA proposing a rule variation based on weight. The outcome of this proposal may not be known for some time. Currently only flying for sport and recreation do not require CASA certification provided the following rules are followed.

Operate below 400ft , only in line of site, not within 5.5km from a airport and not over a populated area.

For commercial work requirements are as follows:

" To fly an RPA of any size *for commercial reward* you need an unmanned aerial vehicle (UAV) controller's certificate and an unmanned operator's certificate (UOC) for your business.

Additional ratings include a flight radio operator's licence, and experience on the type of UAV operated. "

The costs of obtaining these certificates varies but could be between \$18-25,000 for a consultant.

While most farm drones around the world are taking the legwork out of monitoring crops, that is by no means their only role. Below are 10 ways I think a ROA could bring value to your farm.

1. Analyse Trials
2. Spray Escapes monitoring
3. Identify pest and disease outbreaks
4. Crop scouting
5. Identify water logging
6. Provide high resolution topographic data
7. Gives the ability to treat broad acre fields on an individual plant basis.
8. Application and development of software will provide automated analysis of results
9. Quantify vertebrate pests/ straying livestock damage
10. Compliance for varietal licences, monitor resource company activities, etc.