The 36th International Symposium on Remote Sensing of Environment,
11 – 15 May 2015, Berlin, Germany, ISRSE36-190

UNMANNED AIRBORNE SYSTEMS BLUR THE LINE BETWEEN FIELD SURVEY AND REMOTE SENSING

K.E. Joyce [a,] *, S.W. Maier

[a] Research Institute for the Environment and Livelihoods, Charles Darwin University. Ellengowan Road, Darwin, NT 0810 Australia – karen.joyce@cdu.edu.au – stefan.maier@cdu.edu.au

THEME: Airborne and innovative remote sensing platforms and techniques

KEY WORDS: UAS, rotary platform, remote sensing, image processing, field survey

ABSTRACT:
At times promoted, though often demonised by current media, Unmanned Airborne System (UAS) technology is here to stay. However, there is a vast difference between the use of these systems by a hobbyist, and their niche utility within the scientific research context. The latter requires cutting edge sensors, extensive data processing, and model development for linking imagery with environmental information. When effective, UAS provide a critical information source to address the scale and perspective gap between on-ground and other broader scale airborne or satellite observations. Yet integrating UAS into operations as a field survey support tool or remote sensing observation platform is not a trivial matter. The objective of this paper is to detail the trials and tribulations of working with UAS platforms within the context of a small research group at a regional university in Australia. We present this work with the intent to inform other researchers who may also be interested in incorporating UAS into their survey or observational practices. Our framework for developing an all-encompassing system is presented to include not only system requirements, but the training necessary to meet strict regulatory guidelines. This is explored within case studies in the Northern Territory of Australia using off the shelf multi-rotor systems of differing configurations.

* Corresponding author. This is useful to know for communication with the appropriate person in cases with more than one author.