

# **A Multi-disciplinary and Collaborative Approach for Defining Cadastral Boundaries and Recognising Traditional / Customary Lands**

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**Key words:** Cadastre; Geoinformation/GI; Hydrography; Marine cadastre; Photogrammetry; Reference frames; Remote sensing; Security of tenure; Traditional Lands

## **SUMMARY**

In 2018, a large-scale, multi-disciplinary, collaborative survey was initiated for the purpose of determining natural feature cadastral boundaries along the coast and major rivers in remote locations of the Northern Territory of Australia (NTA). More specifically, this unique project facilitated the definition of land that will recognise the Aboriginal structure and practice of ownership by Traditional Land Owners and to subsequently provide pathways for them to own, control, manage and use the resources of their land.

The project provided the opportunity for land professionals in both the private and government sectors to implement contemporary survey, geospatial and hydrographic techniques to define ambulatory boundaries for intertidal zones, and the beds and banks of a river. From an administrative perspective, the project also demonstrated how various organisations with the right intent, as well as effective engagement and consultation, can co-operate within the present system to achieve their own objectives, satisfy the interests of who they represent, while meeting multiple project deliverables and outcomes.

This paper will provide an overview of the project to date, and how the administrative and technical survey geospatial challenges were addressed. For example, the paper will describe the establishment of an appropriate vertical reference frame or height datum for the surveys, production of various geospatial models from high accuracy imagery and LiDAR observations, utilisation of tidal planes to define natural feature, ambulatory boundaries, the development of principles,

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standards, practices and guides for surveys of this nature in the NTA, and effective management of significant legislative and project matters.

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