

Sustaining GNSS CORS Networks through Structured Partnership and Governance Frameworks

Ryan Keenan (Australia) and Carsten Bjornsson (USA)

Key words: e-Governance; GNSS/GPS; Land management; Positioning

SUMMARY

GNSS Continuously Operating Reference Stations (CORS) are foundational to national geospatial infrastructure, underpinning precise positioning for land administration, agriculture, construction, and disaster response. But, while their technical importance is well understood by experts, sustaining these systems remains a persistent challenge in many low- and medium-economy countries. Short funding cycles, limited institutional ownership, and fragmented governance often lead to network degradation and loss of national capability.

With this paper we introduce a structured framework for achieving CORS sustainability through a three-part process: (1) understanding the systemic importance of CORS as shared national infrastructure; (2) embedding sustainability mechanisms through cooperative governance and blended public-private partnership (PPP) models; and (3) aligning outcomes with broader national spatial strategies and the UN-GGIM Integrated Geospatial Information Framework (IGIF).

Drawing on case studies from Africa, Southeast Asia, and Latin America, the paper demonstrates how early integration of governance, technical enablement, and financing strategies across the CORS lifecycle, planning, design, deployment, operations, and service delivery, can ensure long-term viability. It presents a practical “CORS sustainability matrix” linking technical robustness, institutional maturity, and funding diversity, and outlines a stepwise pathway for countries transitioning from donor dependency to self-sustaining service models.

By reframing CORS as critical digital infrastructure rather than a technical niche, the paper argues for a shift from project-based installation to ecosystem stewardship – where co-ownership, local capacity, and continuous reinvestment create the foundation for reliable, interoperable, and economically productive positioning services.