

From Precision Hardware to Open Ecosystem: BDS Global Practices and eSurvey's Vision for Empowering Sustainable Geomatics

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SUMMARY

High-precision geomatics is essential for achieving the United Nations Sustainable Development Goals (SDGs)[3], yet its global implementation faces a “precision divide”, a gap in access to affordable and adaptable technologies. This paper advocates a paradigm shift from closed, proprietary hardware systems toward open, collaborative ecosystems as the key to bridging this divide. Through a dual-perspective case analysis, the paper first examines China's BeiDou Navigation Satellite System (BDS) as an open global infrastructure, supported by its integrated industrial chain, and highlights landmark international projects worldwide. It then traces the development of eSurvey, a global GNSS brand, detailing its concrete contributions to specific SDGs, such as advancing Zero Hunger (SDG 2) through precision agriculture in Turkey and Kazakhstan, and promoting Industry, Innovation and Infrastructure (SDG 9) via digital construction in Saudi Arabia. Building on these cases, the study outlines eSurvey's roadmap to evolve into an open ecosystem architect, proposing a three-tier model encompassing open hardware, software, and collaborative networks. In conclusion, it issues a pledge and a call to action for the FIG community to co-create standards, share knowledge, and strengthen capacities, working collectively toward an inclusive and sustainable geospatial future in which precision empowerment is universally accessible.

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