From Geospatial Data to Intelligent Infrastructure: Building the Future with GKI

Connecting geospatial knowledge, AI and digital ecosystems to enable intelligent, resilient and sustainable economies

Webinar Concept

The convergence of geospatial technologies, artificial intelligence, digital twins, the Internet of Things and increasingly interconnected digital systems is fundamentally transforming how economies plan, build, manage and optimise their infrastructure and resources. As the world transitions towards more intelligent, autonomous and sustainable systems, the strategic imperative is shifting from generating and managing geospatial data to creating an integrated knowledge infrastructure that enables contextual intelligence, informed decision-making and coordinated action.

Geospatial Knowledge Infrastructure (GKI) provides a framework for this transition. It moves beyond conventional spatial data infrastructures and isolated technology platforms to establish a connected ecosystem in which geospatial information, digital technologies, institutional capabilities, governance frameworks and knowledge services operate together to generate sustained economic, environmental and societal value. Within this framework, geospatial intelligence becomes an integral component of broader digital transformation, providing the spatial context necessary to understand complex systems, model interdependencies, anticipate change and enable more responsive decisions.

The significance of GKI extends across the entire technology and intelligence value chain—from Earth observation, positioning, mapping and IoT-enabled sensing to trusted data infrastructures, cloud and edge computing, interoperability frameworks, AI-driven analytics, digital twins and integrated decision-support systems. By connecting these capabilities, GKI can enable the development of **intelligent infrastructure that not only captures and processes information but also interprets changing conditions, supports predictive insights and informs operational responses.** This represents an important evolution in the role of geospatial technologies: from supporting individual applications to underpinning interconnected, cross-sector intelligence ecosystems.

However, realising this vision requires more than technological advancement. Persistent fragmentation across data ecosystems, limited interoperability between platforms, uneven institutional capacities and disconnected investment priorities continue to constrain the translation of technological capabilities into scalable outcomes. Building GKI therefore requires a fundamental rethinking of how governments, industry, research institutions and technology providers collaborate to develop shared foundations, establish trusted governance mechanisms, mobilise investment and deliver knowledge-driven services.

This webinar will explore how **GKI can serve as a strategic enabler of intelligent infrastructure and the future geospatial ecosystem**, examining its evolving architecture, relationship with emerging technologies and potential to transform infrastructure planning, urban development, mobility, energy systems, climate resilience and public service delivery. It will also consider how responsibilities and opportunities are

changing across the geospatial value chain, with governments increasingly acting as ecosystem enablers and industry moving beyond technology provision towards the co-creation of integrated knowledge and intelligence services.

Key Questions the webinar will answer

1. How is the transition from spatial data infrastructure to Geospatial Knowledge Infrastructure redefining the role of geospatial technologies in the digital economy?
2. What technological, data and institutional capabilities are needed to connect GKI with AI, digital twins, IoT and intelligent infrastructure systems?
3. How can GKI enable interoperable, trusted and continuously evolving intelligence ecosystems rather than fragmented technology applications?
4. What roles should governments, industry and international organisations play in building, governing and scaling GKI?
5. Which collaborative, investment and business models can translate GKI into measurable economic, environmental and societal outcomes?

Expected Takeaway: The webinar will establish GKI as an enabling framework for the next generation of intelligent infrastructure, highlighting the technological architecture, institutional partnerships and strategic priorities required to move from fragmented geospatial capabilities towards integrated, knowledge-driven and commercially sustainable ecosystems.