Empowering Project Lifecycles with Geomatics Positioning for Enhanced Data Utilization

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The environmental industry has witnessed a significant transformation in recent years, driven by the adoption of advanced positioning technologies. Geomatics positioning tools have emerged as a pivotal component in this paradigm shift, offering unparalleled precision, efficiency, and accuracy in environmental monitoring, management and remediation projects. ProDelta Projects has been an early adopter and developer of these tools including Field DMS, Smart Dig, R20 and through our Minimal disturbance assessments.

Geomatics positioning tools encompass a wide array of advanced technologies, including Global Navigation Satellite Systems (GNSS), LiDAR (Light Detection and Ranging), Bathymetry, and Geographic Information Systems (GIS), among others. These tools enable environmental professionals to capture precise spatial data, create high-resolution maps, and conduct detailed topographic surveys with exceptional accuracy. By harnessing the power of Geomatics positioning, environmental practitioners can effectively monitor changes in land use, vegetation cover, and natural habitats, facilitating informed decisionmaking processes for sustainable resource management.

Furthermore, Geomatics positioning tools play a pivotal role in environmental impact assessments for development projects. The integration of high-precision GNSS technology with environmental monitoring allows for the accurate delineation of project boundaries, identification of sensitive habitats, and evaluation of potential environmental risks. This facilitates the proactive identification and mitigation of environmental impacts, ensuring that development projects adhere to stringent regulatory standards and environmental best practices. Additionally, the seamless integration of Geomatics data with environmental modeling software empowers stakeholders to visualize and analyze the potential implications of development activities on ecosystems and natural resources.

In the context of remediation, Geomatics positioning tools offer unparalleled capabilities for spatial data collection and analysis. By leveraging real-time GNSS positioning and GIS technology, environmental professionals can precisely geo-reference pollution sources, delineate contamination plumes, and assess the spatial extent of environmental hazards. This critical information forms the basis for designing targeted remediation strategies and establishing effective monitoring frameworks to track the progress of environmental cleanup initiatives.

The Primary application of Geomatics tools is aligning the data collected by Environmental professionals with the established datums and coordinate systems in a repeatable manner. Repeatability facilitates the integration of data from other professionals, historical data and data from subsequent site visits and collections. The utilization of proper positioning techniques is also critical to get the most out of Drone technology which has become a “goto” for data collection and scouting. Understanding how proper positioning is used to align data collections allows for the reuse and reinterpretation of data in context and allow for the advanced assessment of the data in models, for the use in AI and the development of epoch based understanding of a project location.

In this presentation we plan to discuss the lifecycle of data collection and how the use of proper positioning techniques during each data collection can transform independent data collections into integrated data solutions that provide new insights into project sites and new intelligence that can be leveraged by environmental professionals. We will look at several specific examples of how utilizing Geomatics tools and workflows can improve efficiency, transparency, derive unique insights and facilitate collaboration between professionals, Owners and in inhabitants of the land in the mining and Oil and Gas industries.

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Kris Kwiatkowski

Kris Kwiatkowski, P.Eng., is an accomplished Manager and Executive with over 18 years of proven experience in the Geomatics, Environmental, and Construction industries. His expertise spans project management, land development, boundary survey, construction survey, spatial analysis, pipeline management, and the utilization of advanced technologies including UAV, Laser Scanning, Mobile Mapping, Ground Penetrating Radar, and Hydrography. Kris has also been instrumental in the establishment of industry standards.

Kris embarked on his career as a survey assistant, steadily advancing over the course of 18 years to contribute significantly to the advancement and improvement of the industries he serves. He dedicated over a decade to enhancing, creating, developing, and providing training on Geomatics tools and systems at the largest Geomatics company in Canada. With the progression of his career, Kris transitioned into the Construction and Environmental sectors, consistently advocating for the integration of Geomatics tools to enhance organizational capabilities. Currently, Kris serves as the Director of Geomatics/ Engineering at ProDelta Projects Inc.

In addition to his professional roles, Kris is a Certified Advanced Drone Pilot and a practicing Engineer licensed in British Columbia, Alberta, Saskatchewan, and the Yukon. He is also an Associate member of the Alberta Land Surveyors Association. Kris actively contributed to the industry through his involvement in the ALSA futures committee, participation on the Board of Directors of Eclipse College, and volunteer work for the Calgary Stampede.