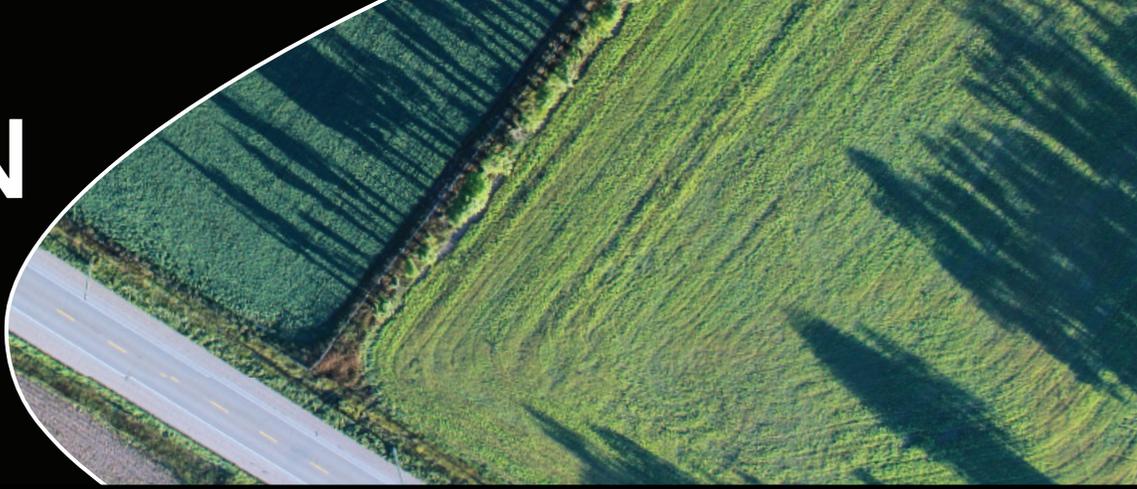# CENGN

H2O GEOMATICS INNOVATION HIGHLIGHT

H2O Geomatics

COMPANY OVERVIEW

Founded in 2014, H2O Geomatics is a small startup headquartered in Communitech. Specializing in satellite and drone-based remote sensing, H2O Geomatics developed a solution called NXT Farm, an innovative smart farming platform. Having worked with both the European and Canadian Space Agencies, NXT Farm has been developed with some of the most innovative algorithms in the world, helping the farming industry access imagery, data and insight into their fields to drive a solution for the global food supply chain problem.

LOCATION: WATERLOO, ON

TECHNOLOGY

Data Centre and Cloud

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NDVI: A STANDARD FOR PRECISION ALGRICULTURE

Normalized Difference Vegetation Index (NDVI) is a measurement system that provides data on crop health. Used in agriculture and forestry, NDVI measures the health of a plant-based on how the plant reflects light at specific frequencies. While NDVI is a standard measurement system for almost all precision agriculture systems, it misses out on other important variables that indicate a crop's overall health.

BEYOND NDVI ANALYSIS: NXT FARM

H2O Geomatics created NXT Farm to provide more than just the standard NDVI measurement. Utilizing satellite images, NXT Farm's algorithms are the first of its kind providing data on crop nitrogen levels, water stress, and soil moisture to measure health conditions. NXT Farm analyzes this data and automatically notifies farmers and farming consultants when there is a problem, allowing them to take action before there is permanent damage.

STABILIZING THE NXT FARM PLATFORM

Looking to stabilize NXT Farm's platform at a higher scale, H2O Geomatics used CENGN's infrastructure to confirm that the platform can handle 100k concurrent acres and 1k users without compromising performance. While at CENGN, H2O Geomatics also identified and resolved various issues enabling the NXT Farm platform to be deployed in any Kubernetes Cloud environment removing their dependency from Google Cloud. After completing the project, NXT Farm now requires less computational resources, reducing operational costs and readying them to take on more customers.

> "CENGN provided great help with debugging and troubleshooting latent bugs and malfunctioning components, allowing for greater understanding of system cohesion."

Davis Alukka
Lead Developer, H2O Geomatics