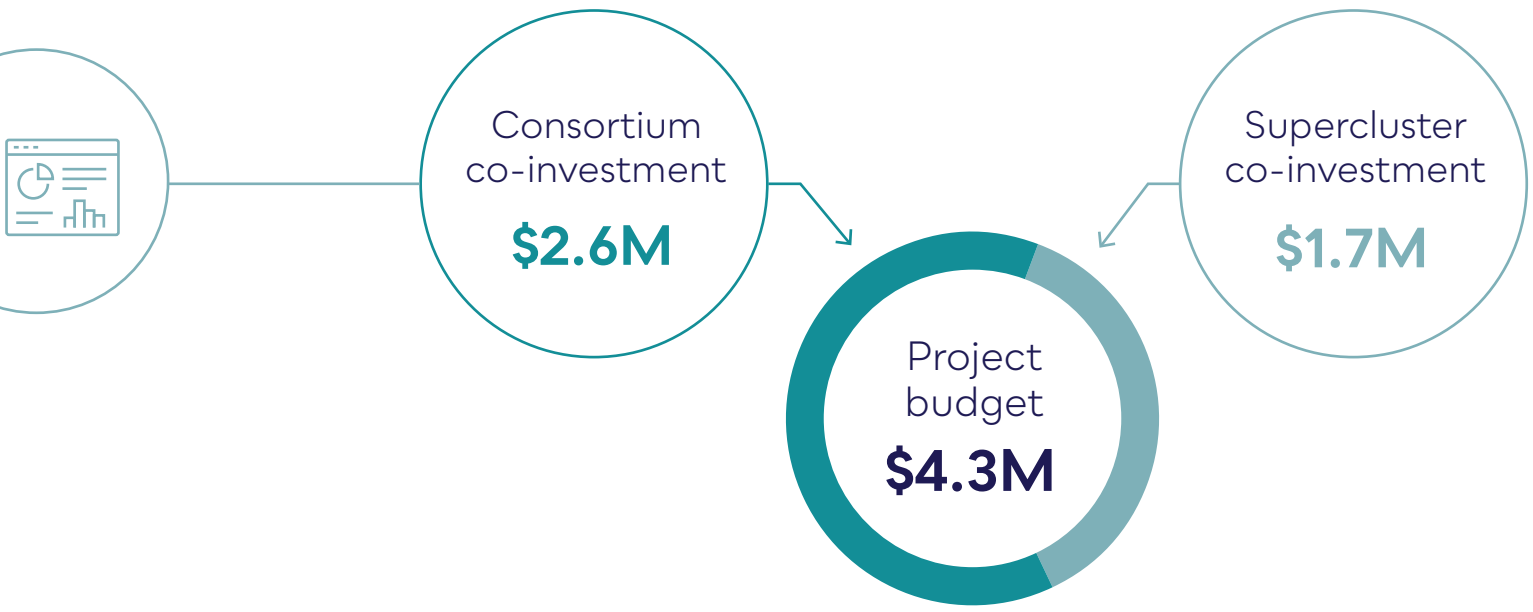
CANADA'S DIGITAL TECHNOLOGY SUPERCLUSTER

Earth Data Store

A platform to aggregate and analyze geospatial and earth observation data.



Project Overview

Canada's iconic landscape is defined by its resource rich forests, fields, lakes, mountains, and oceans.

Our resource sector contributes 17% to Canada's GDP. Improved stewardship and management is needed to protect Canada's forests from wildfires that cost $0.5 -$1.0 B annually and to support sustainable development of major resource projects valued at $585 B over the next 10 years.

In Canada, and abroad, the remote sensing sector is poised for enormous growth because of the value of earth observation imagery. Global coverage and temporal resolutions of imagery data is increasing at an unprecedented rate, generating trillions of new pixels of imagery data daily.

The challenge with this 'big data' is finding practical ways to extract value and deliver it to end users at scale, both due to the complex nature and the sheer volume of information.

Detailed, standardized geographic information is required to enable analytics which facilitates good stewardship of our ecosystems by enabling insights to understand, monitor, and manage our environment and resources in sustainable manners. This can be accomplished through massive aggregation of data from remote sensors coupled with novel approaches to preparing and analyzing data.

UrtheCast, in collaboration with Sparkgeo, Microsoft, University of BC, University of Victoria, Bioenterprise and Geoscience BC, will address this challenge by developing the Earth Data Store, to provide unparalleled access to standardized temporal and spatial earth observation data and develop industry-specific applications that will allow end-users to see how a region evolves over time using visual interactive maps and running deep learning algorithms.

In this first phase, the Earth Data Store tackles the normalization problems of data, particularly with data generated from multiple sensors, which can consume up to 80% of the effort preparing for analysis. It is expected this project will support the growth of companies delivering big data/geospatial analytics products and information services, a global market estimated to be worth $10 B.

The project will look at a number of use cases, including the assessment of risk related to climate change. Improved assessment of the impact of increasingly frequent "extreme weather" events can mitigate impacts on our resource sectors and the wellbeing of our citizens.

BIOENTERPRISE Building Ag-Bio Based Businesses

UBC

University of Victoria

Microsoft

Geoscience BC

urthecast

geo