Post-disaster Infrastructure Assessment with Non-conventional Operations (PIANO) of UAS

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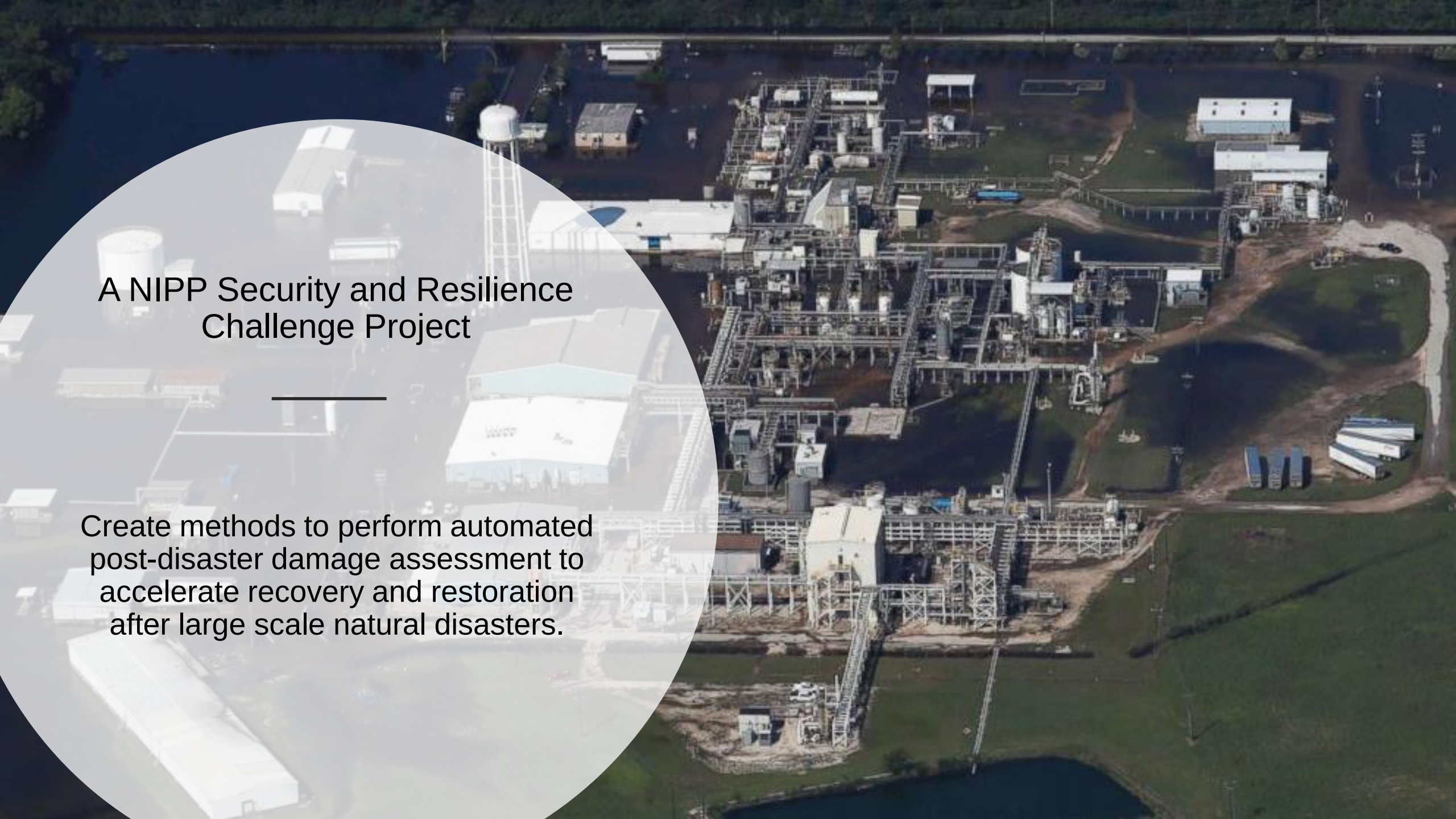
DGT Associates
UAS Development
MassRobotics

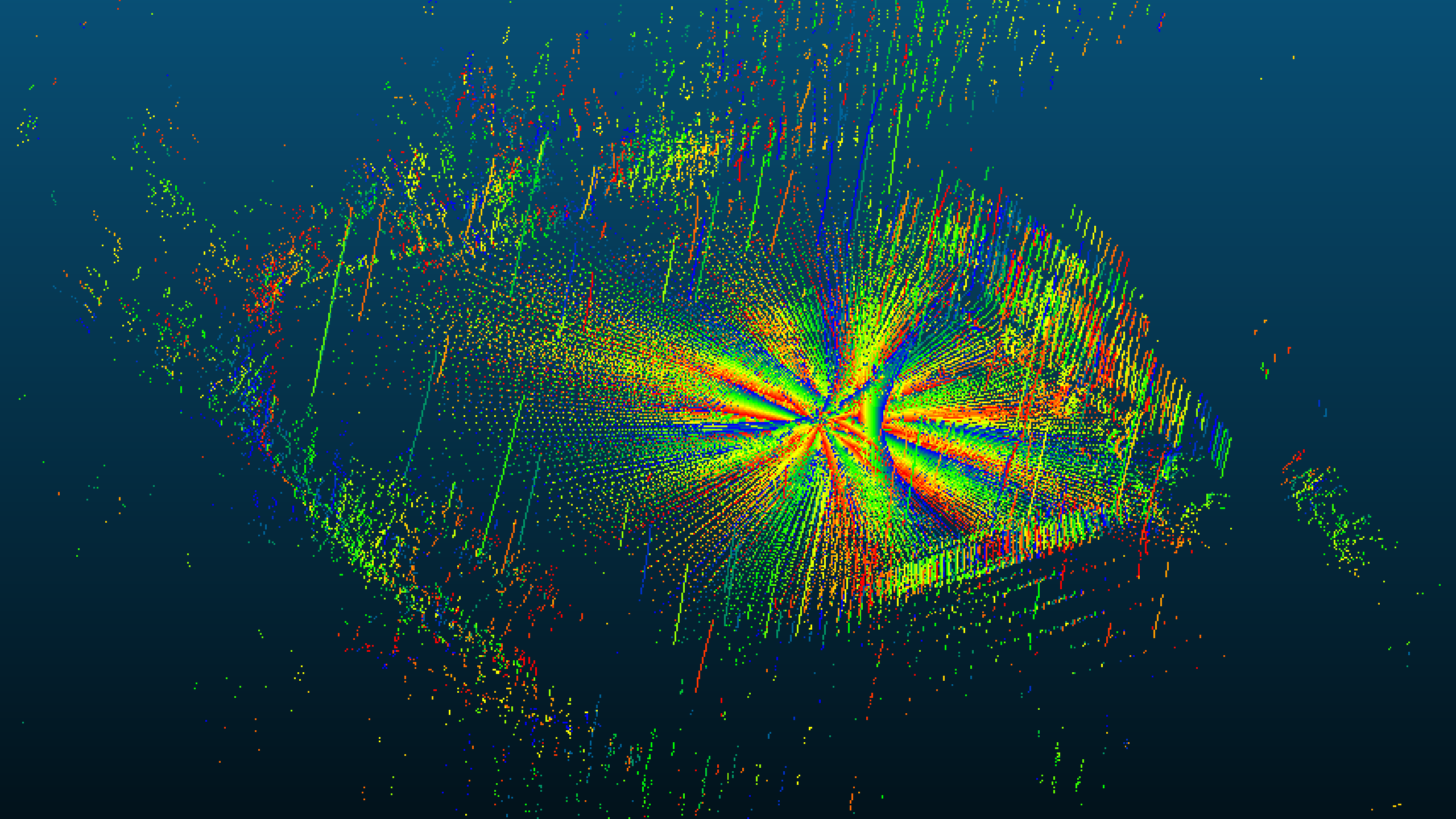


A NIPP Security and Resilience Challenge Project

Create methods to perform automated post-disaster damage assessment to accelerate recovery and restoration after large scale natural disasters.

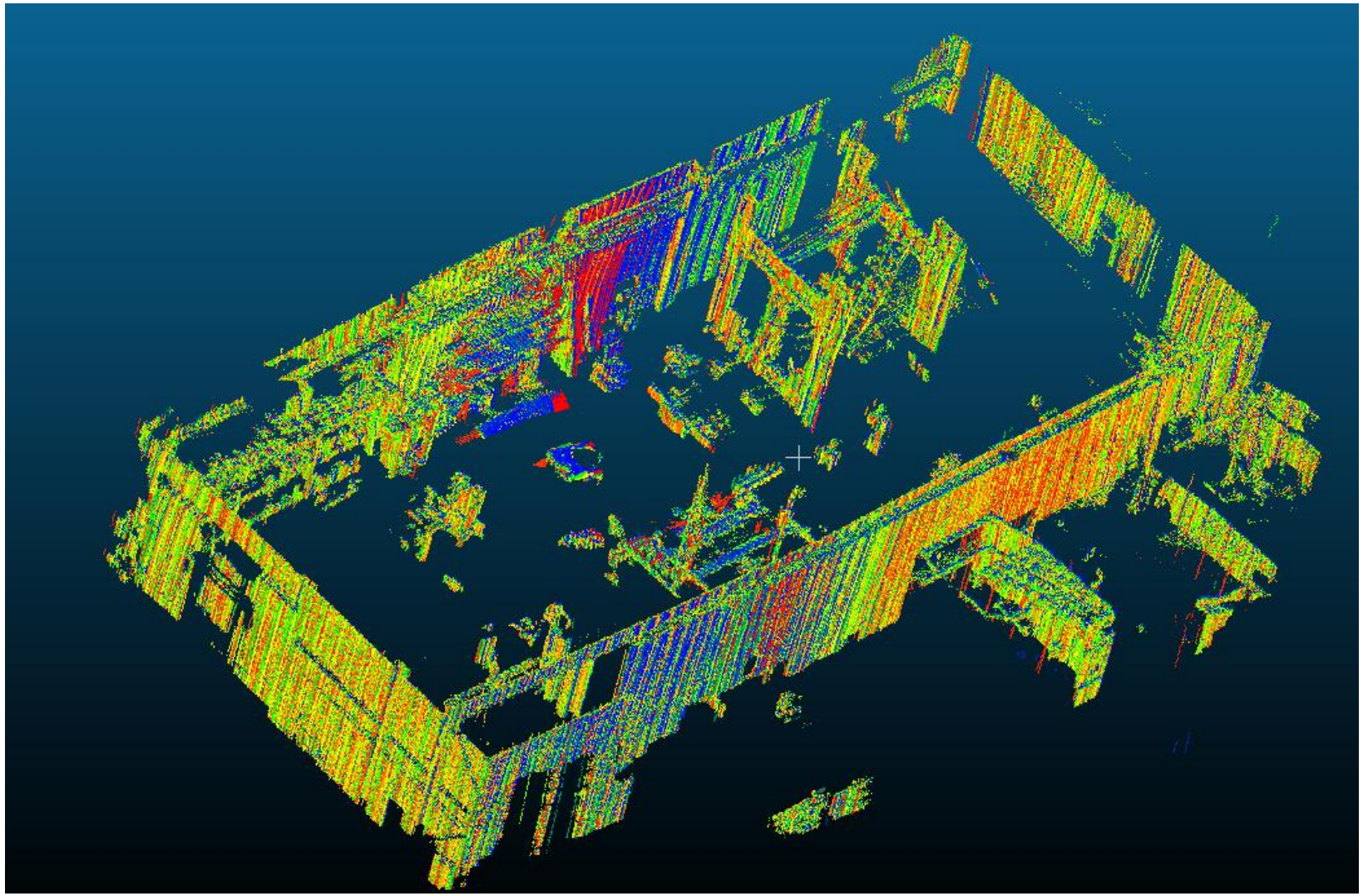
Motivation

Approach

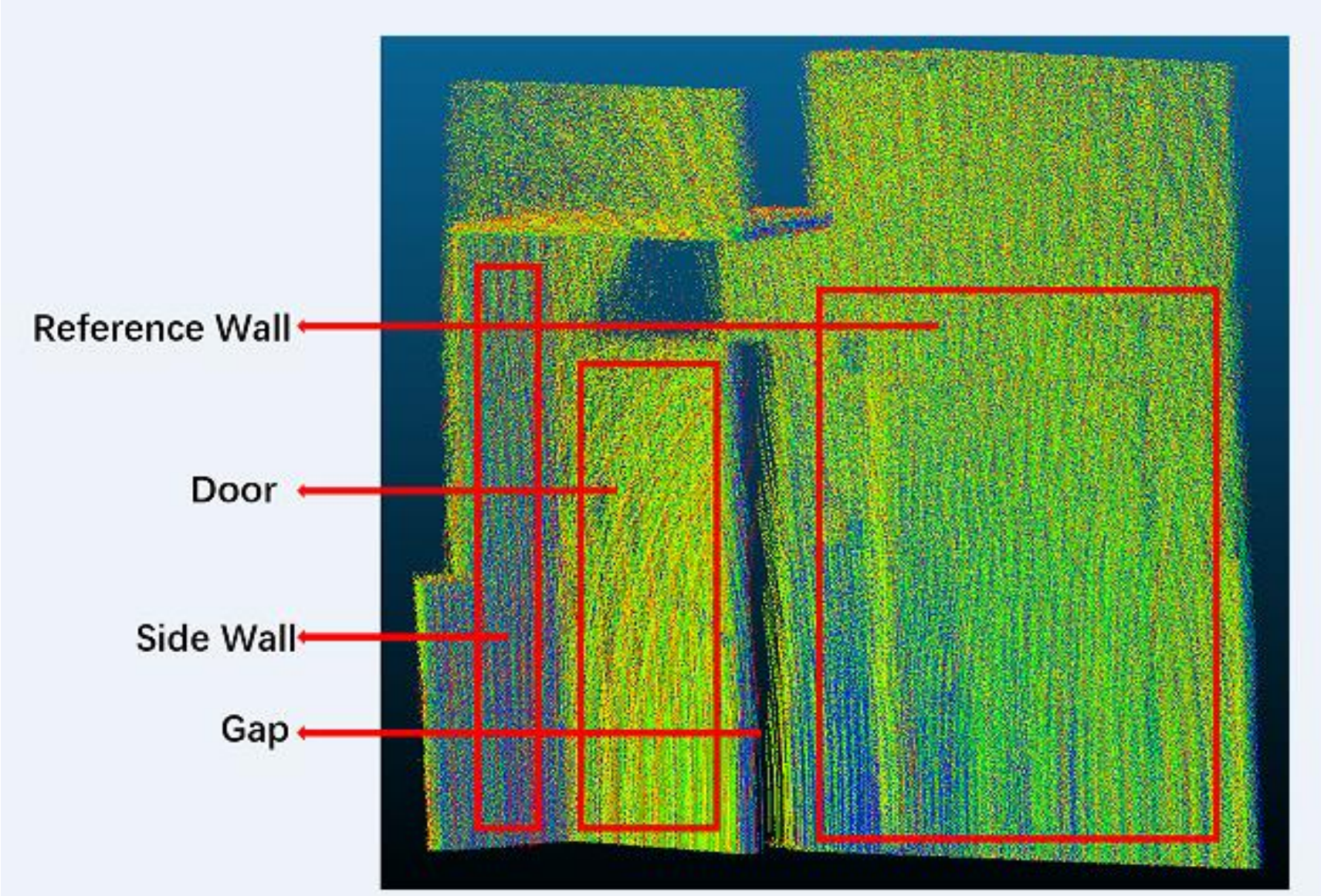


Data Collection

Data Collection

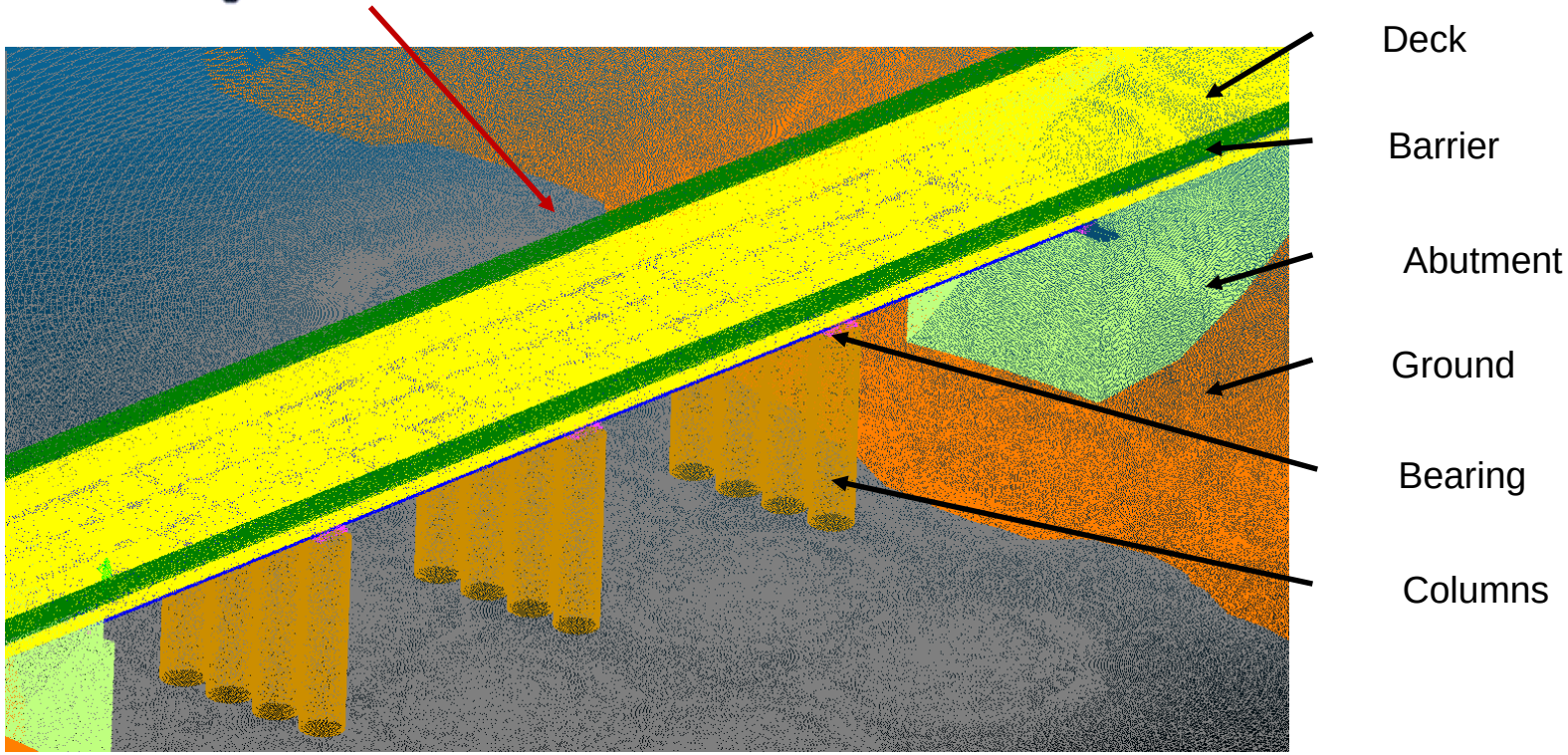


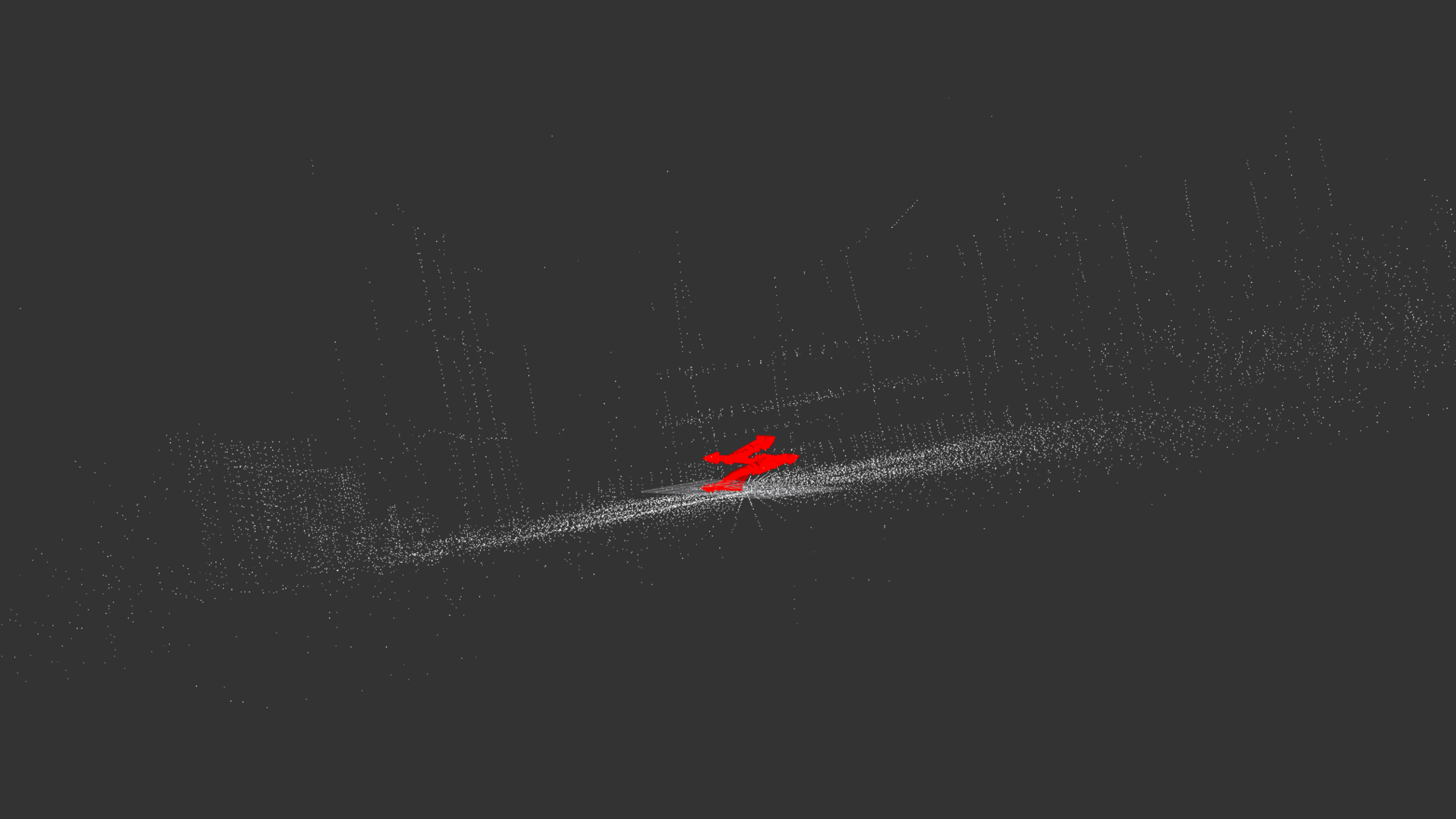
Data Processing



Semantic Modeling

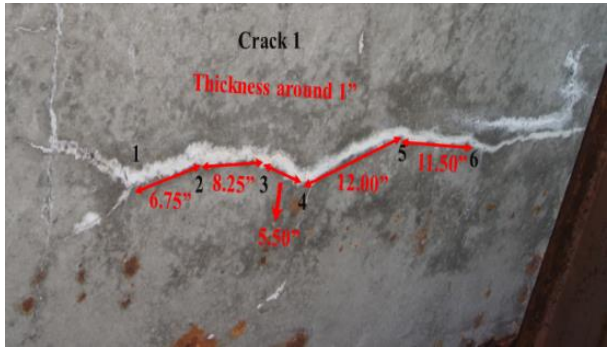
Target object assigned to the UAV

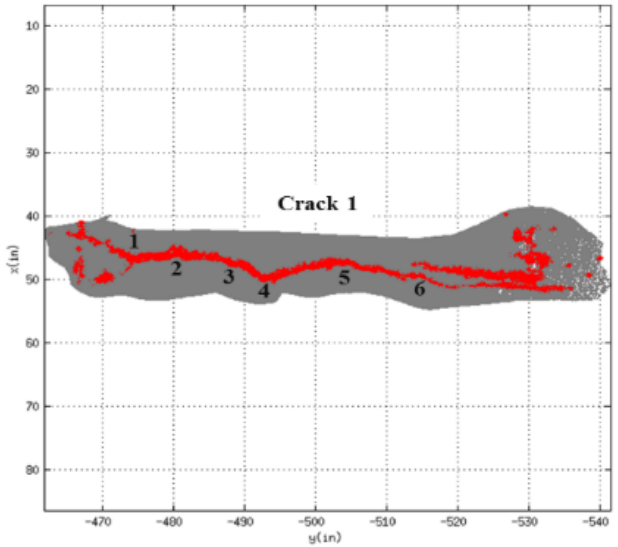




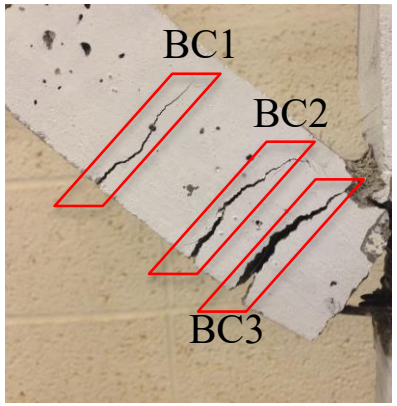
Types of Damages

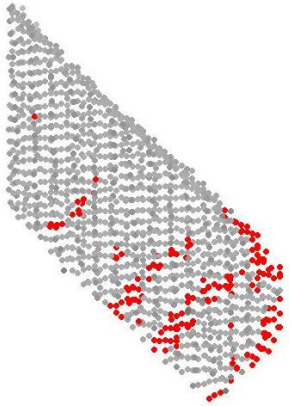
Concrete Crack

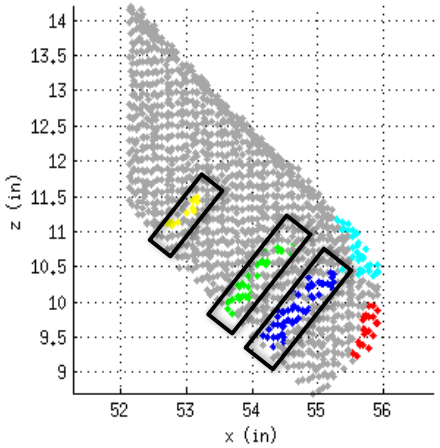




Multiple Cracks







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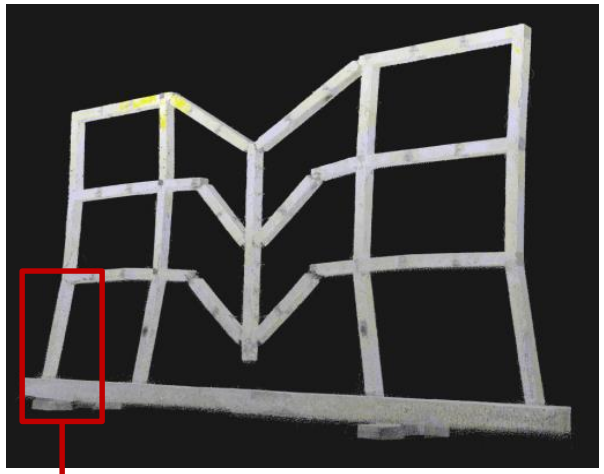
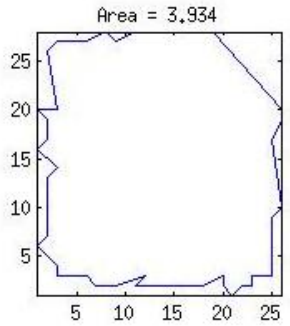
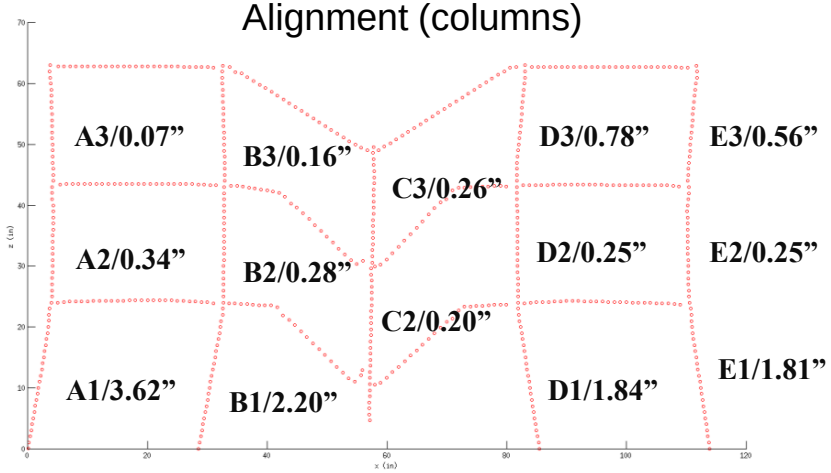


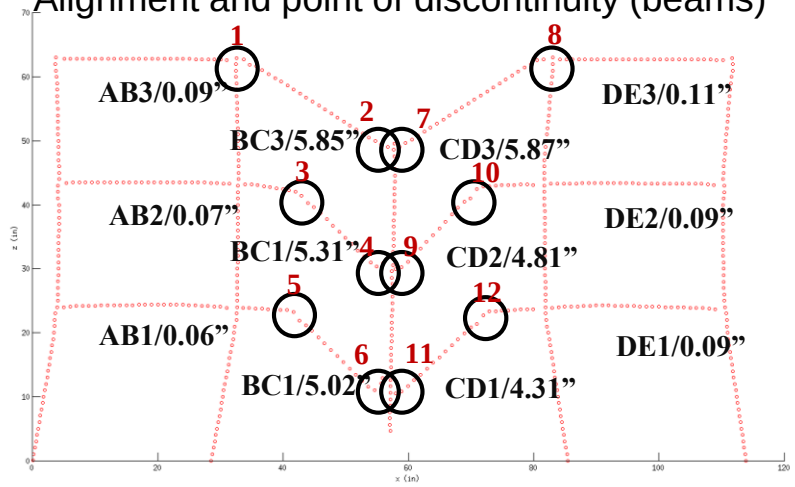
Cross-section change



Alignment (columns)



Alignment and point of discontinuity (beams)



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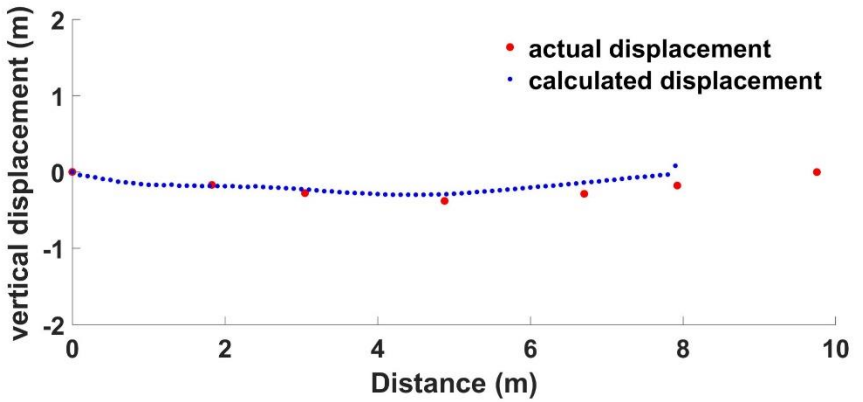
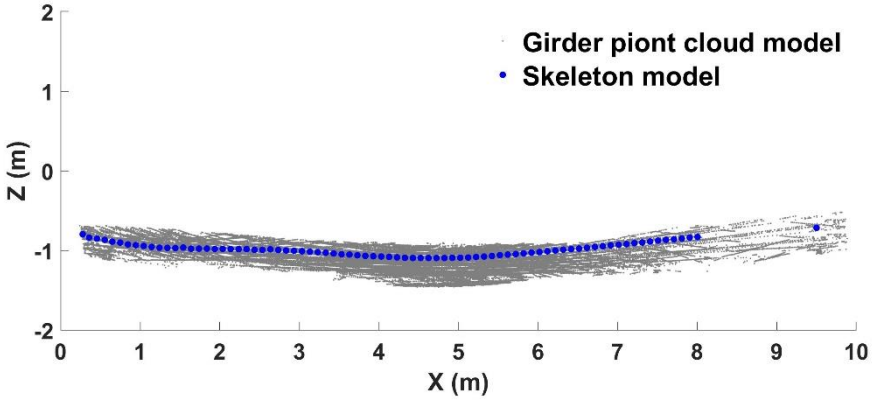
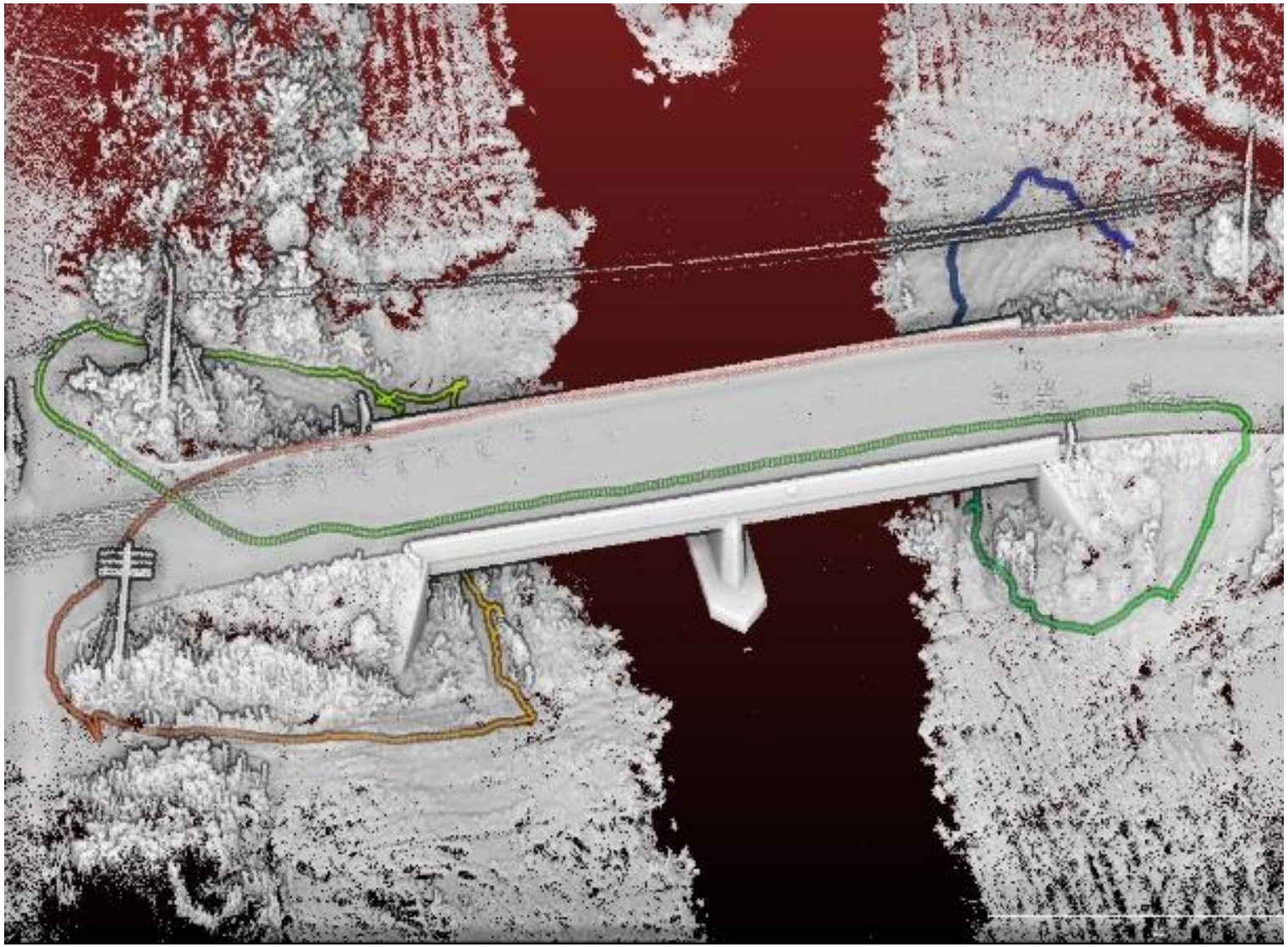




Towards Autonomy



Towards Autonomy

Call to collaboration

Bridges with concrete decks

Open steel structures

Above-ground pipelines

Dams/levees