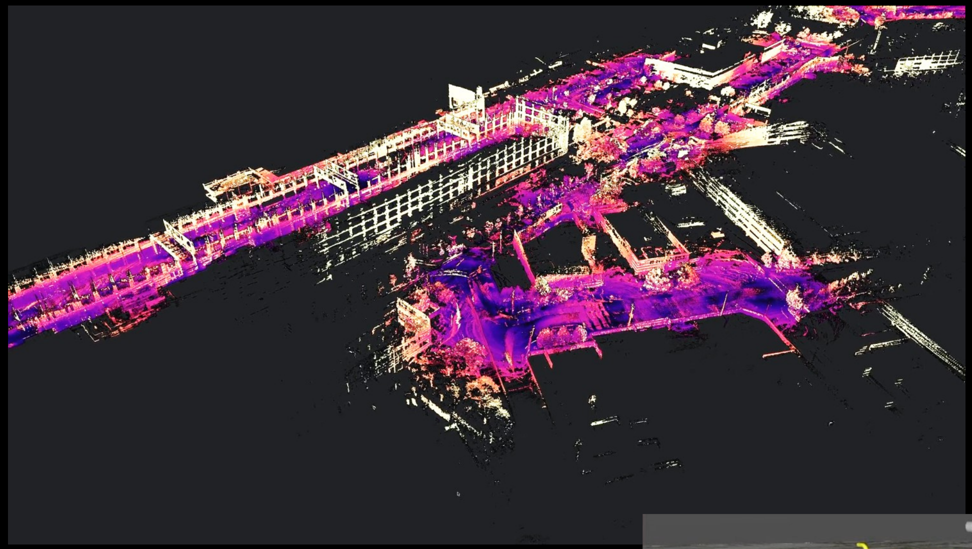
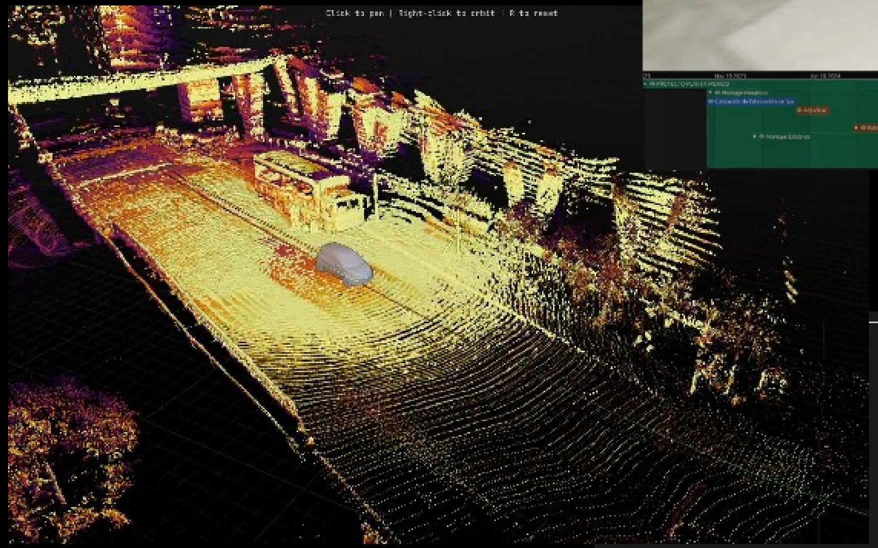
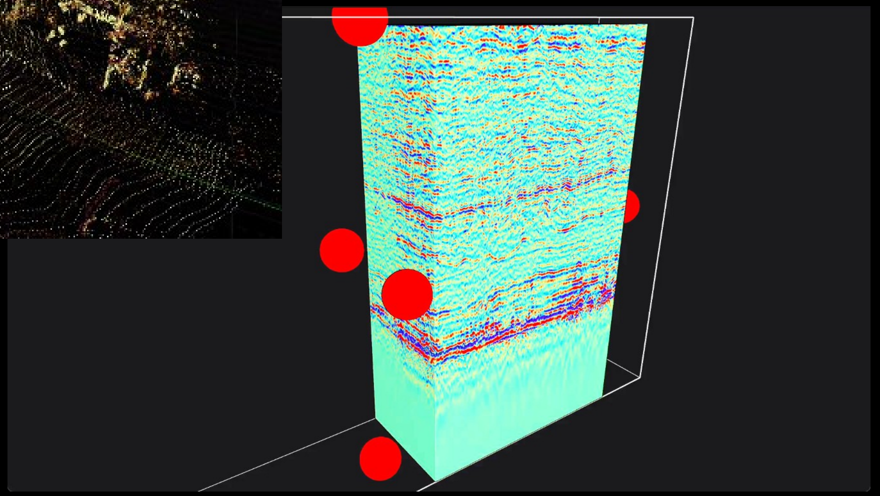
From Mines to Mobility

Taming Multidimensional Spatial Data for Scalable Digital Twins







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FORESIGHT

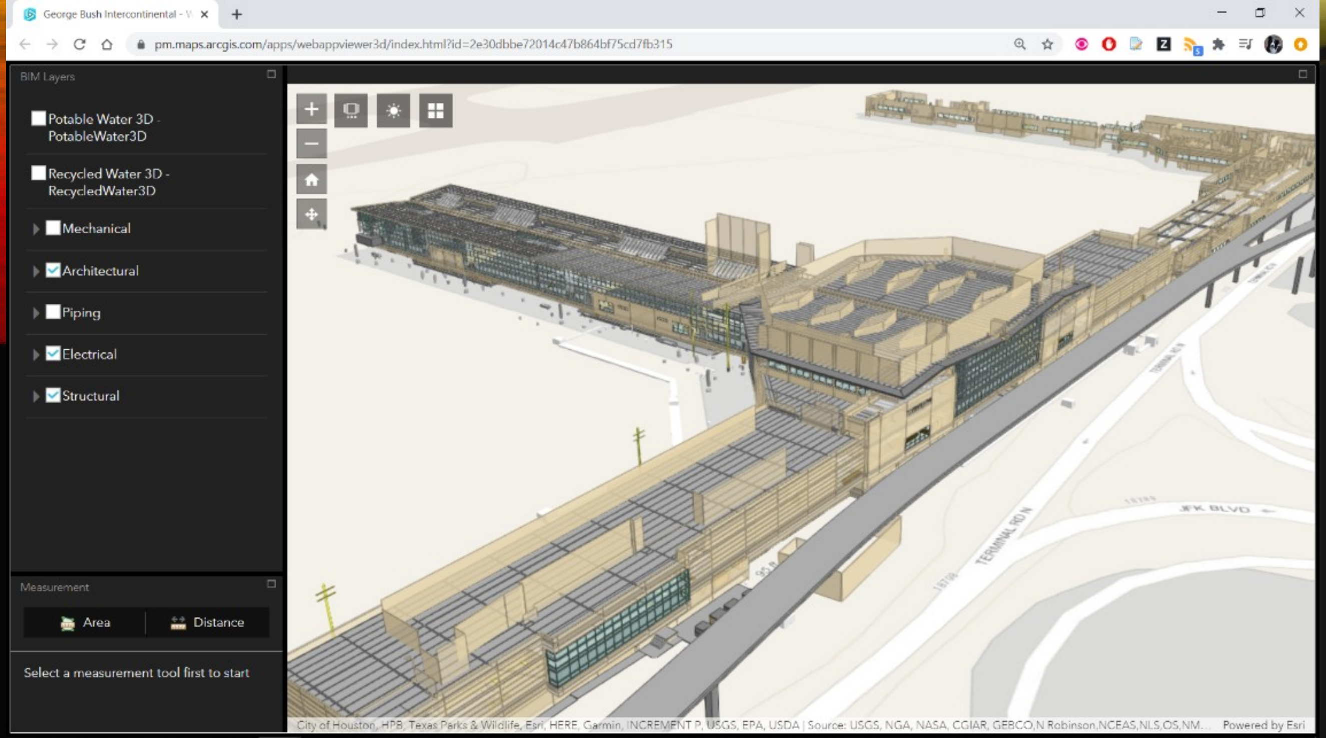
Évolution Informatique SAS

GWF
GEOSPATIAL WORLD FORUM
CONFERENCE & TECH SHOW

NO SINGLE VENDOR WILL PROVIDE THE DIGITAL TWIN PLATFORM FOR EVERYTHING.

CUSTOMERS ARE GOING TO DEMAND **MORE** DIGITAL TWIN APPLICATIONS, **NOT FEWER**.

Chris’s 2026 prediction



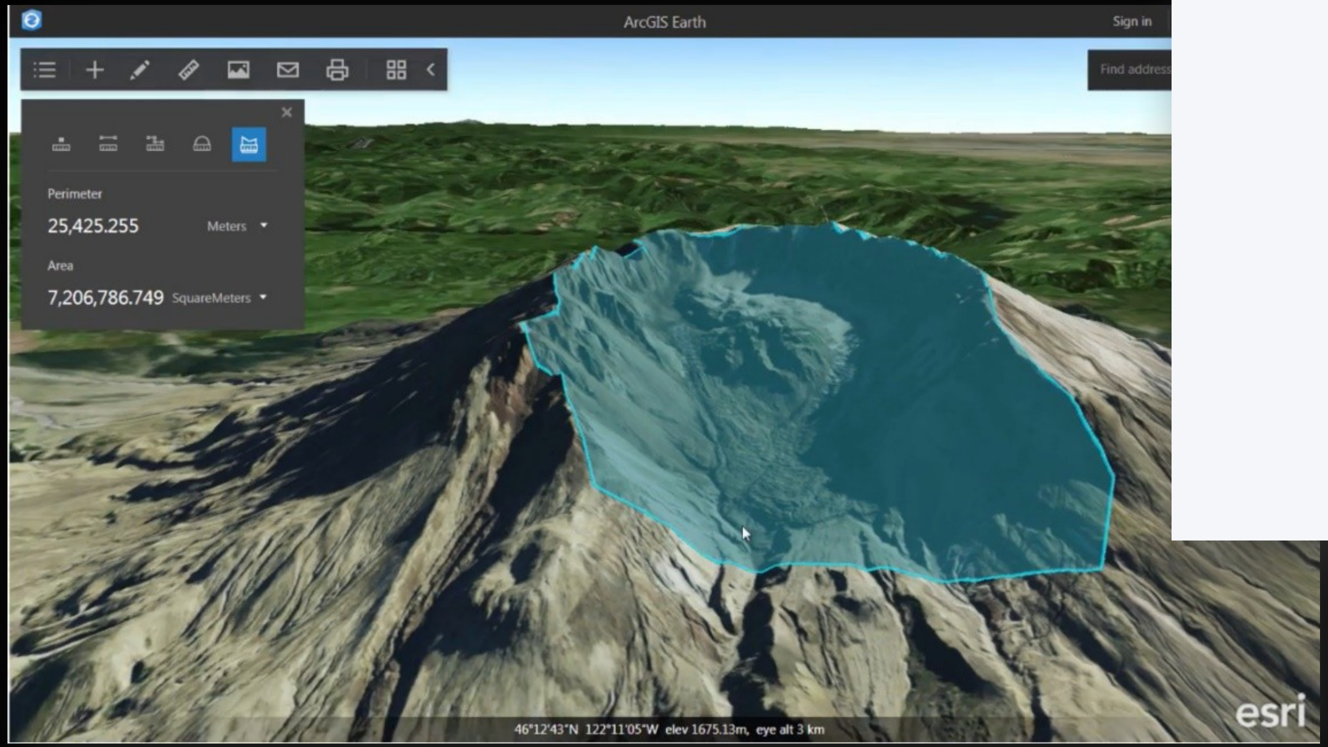
Esri Digital Twins, AEC, BIM, ArcGIS GeoBIM

Chris Andrews

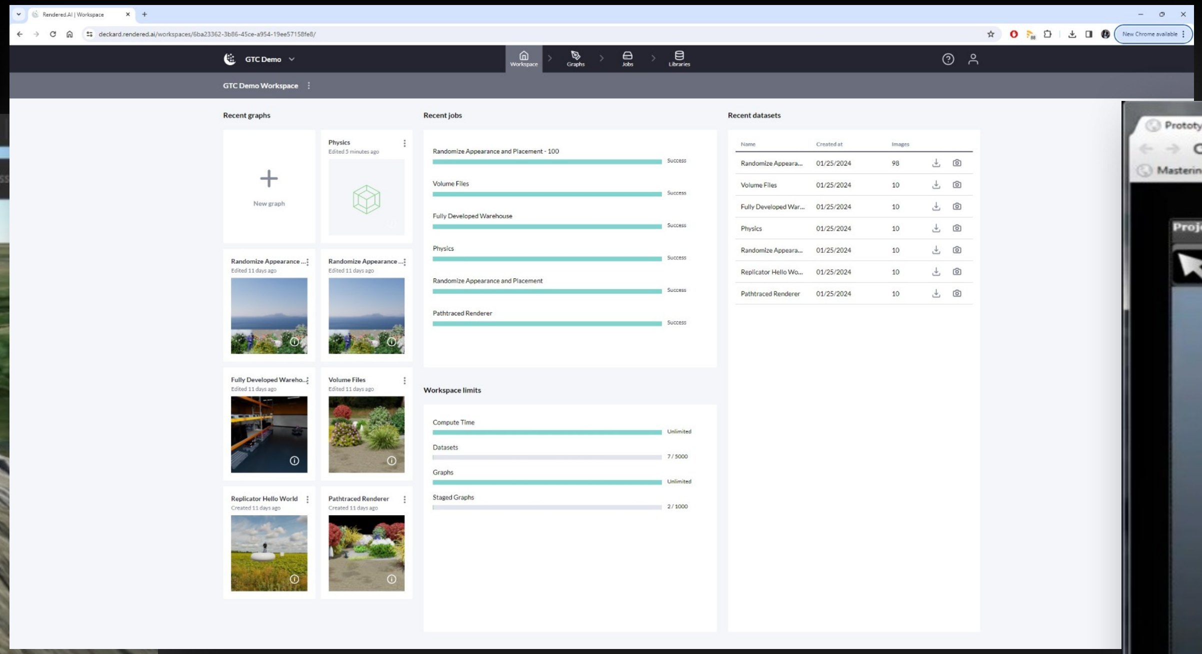
Évolution Informatique

representing FS Labs

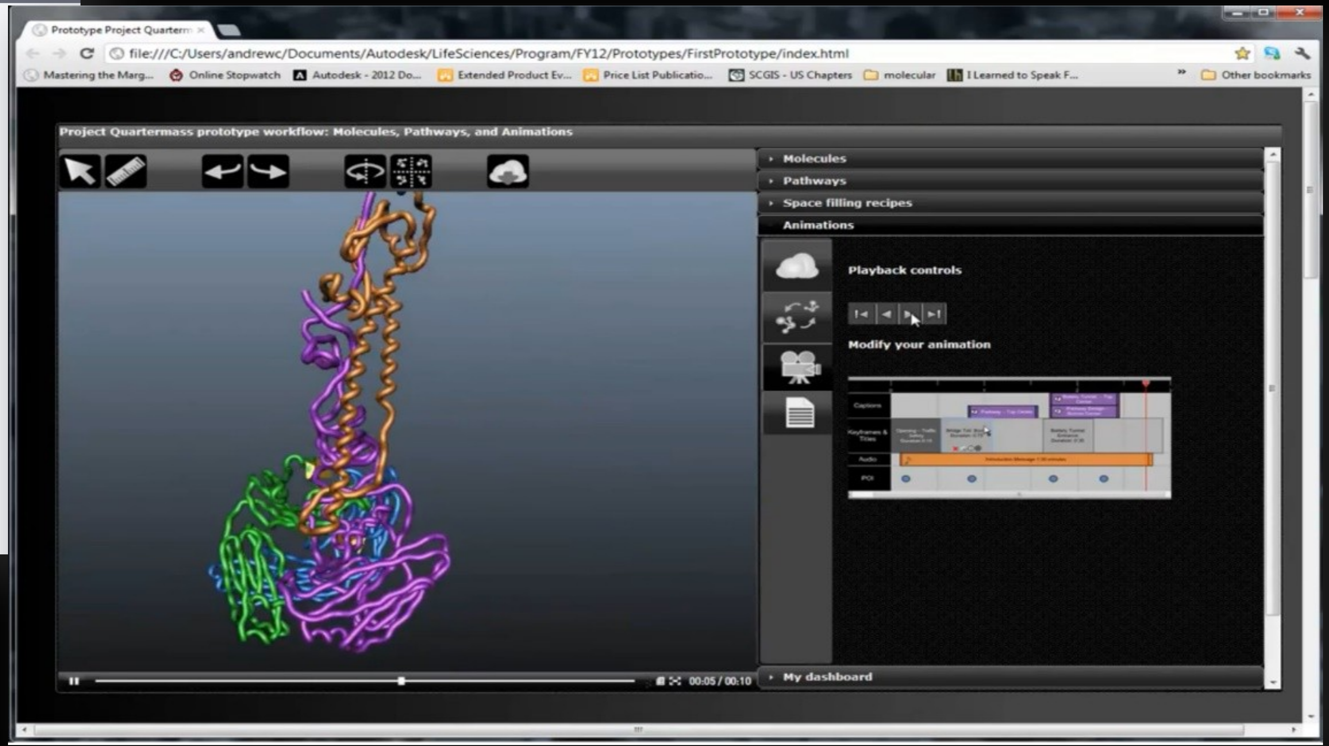
Autodesk Project Galileo/InfraWorks



Esri 3D, I3S, ArcGIS Earth



Rendered.ai PaaS for Synthetic Data



Molecular Visualization @ Autodesk

Digital Twins

- Virtual representations of the real world that incorporate physical objects, processes, relationships, and behaviors
- **Combine** historical state with up-to-date information used to observe and monitor performance and to explore or predict future state
- Synthesize data across domains such as construction, environment, and operations
- Complex real-world assets or systems may have many different digital twins used to simulate, monitor, and analyze different aspects of construction, operations, and maintenance

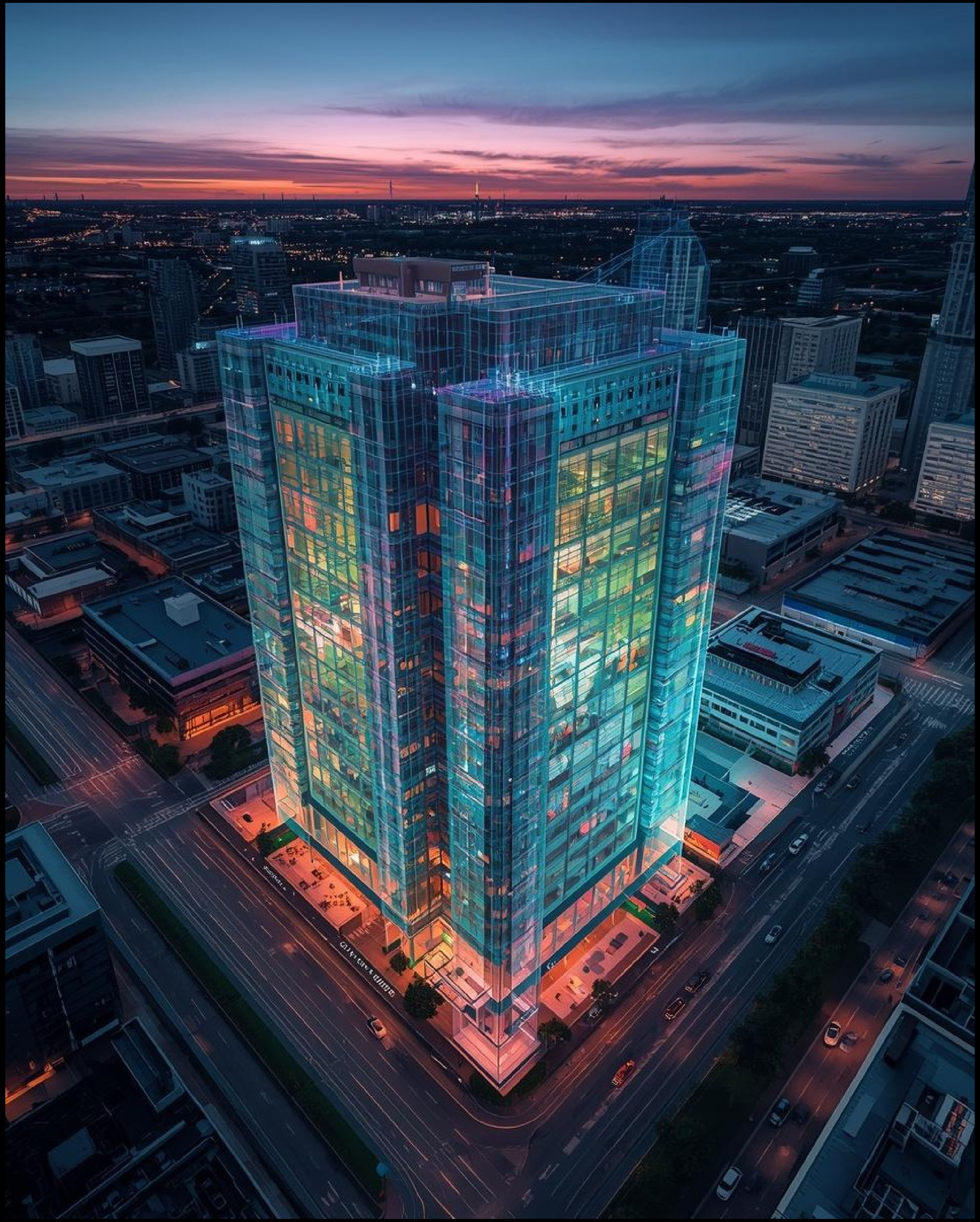
Foundations for Digital Twins in AEC

Accelerated with BIM-GIS integration

- Cost savings realized by more integrated design efforts
- Regulatory requirements for construction “in context”
- Improving value of in-house BIM-adjacent capabilities
- Regional competitive advantage for many firms

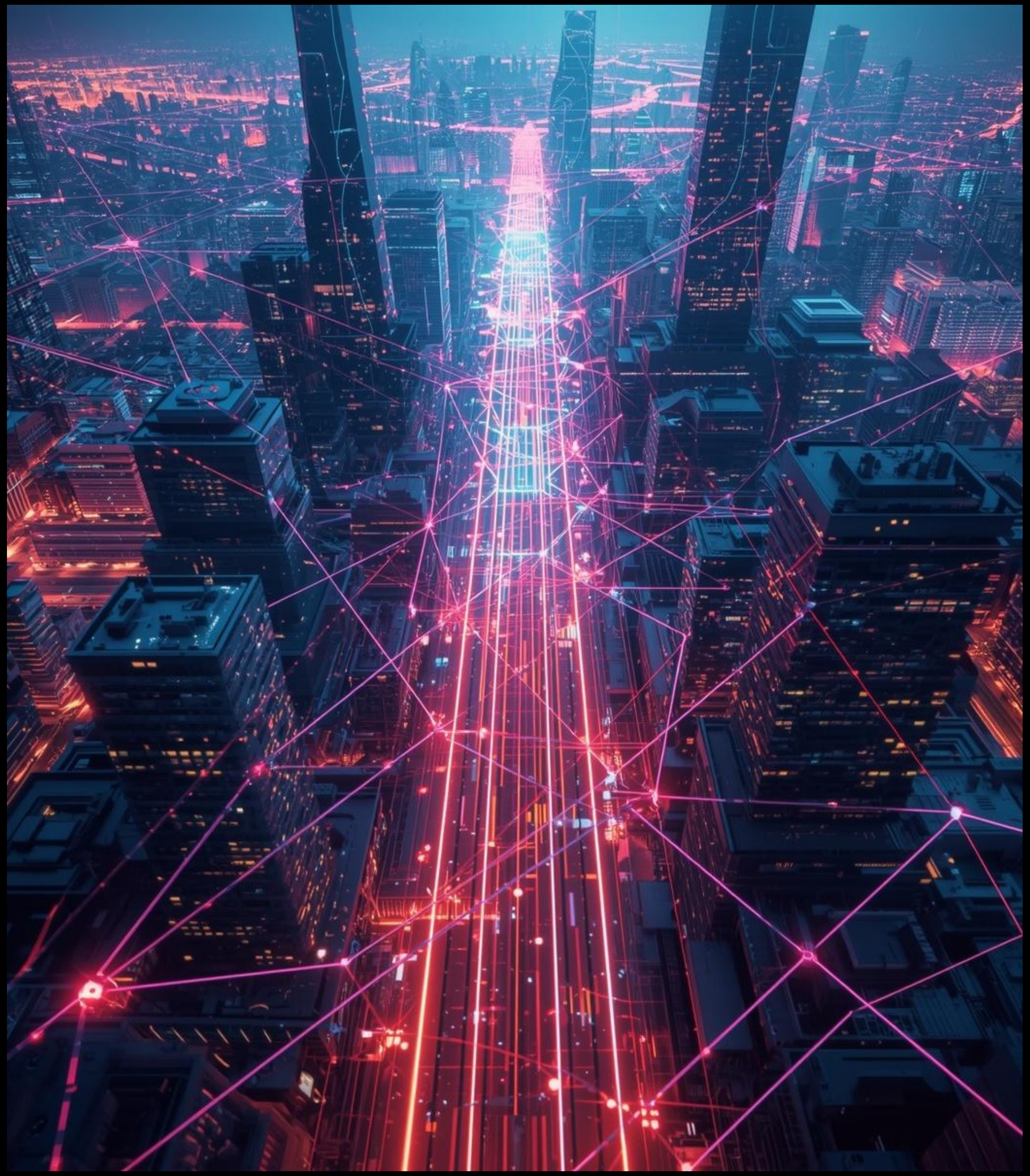
Moving from siloed tools to more connected workflows across landscape and urban environments

- BIM-GIS integration requirements have been adopted in dozens of countries and by many major customers
- Need to understand **systems**, not **individual assets**

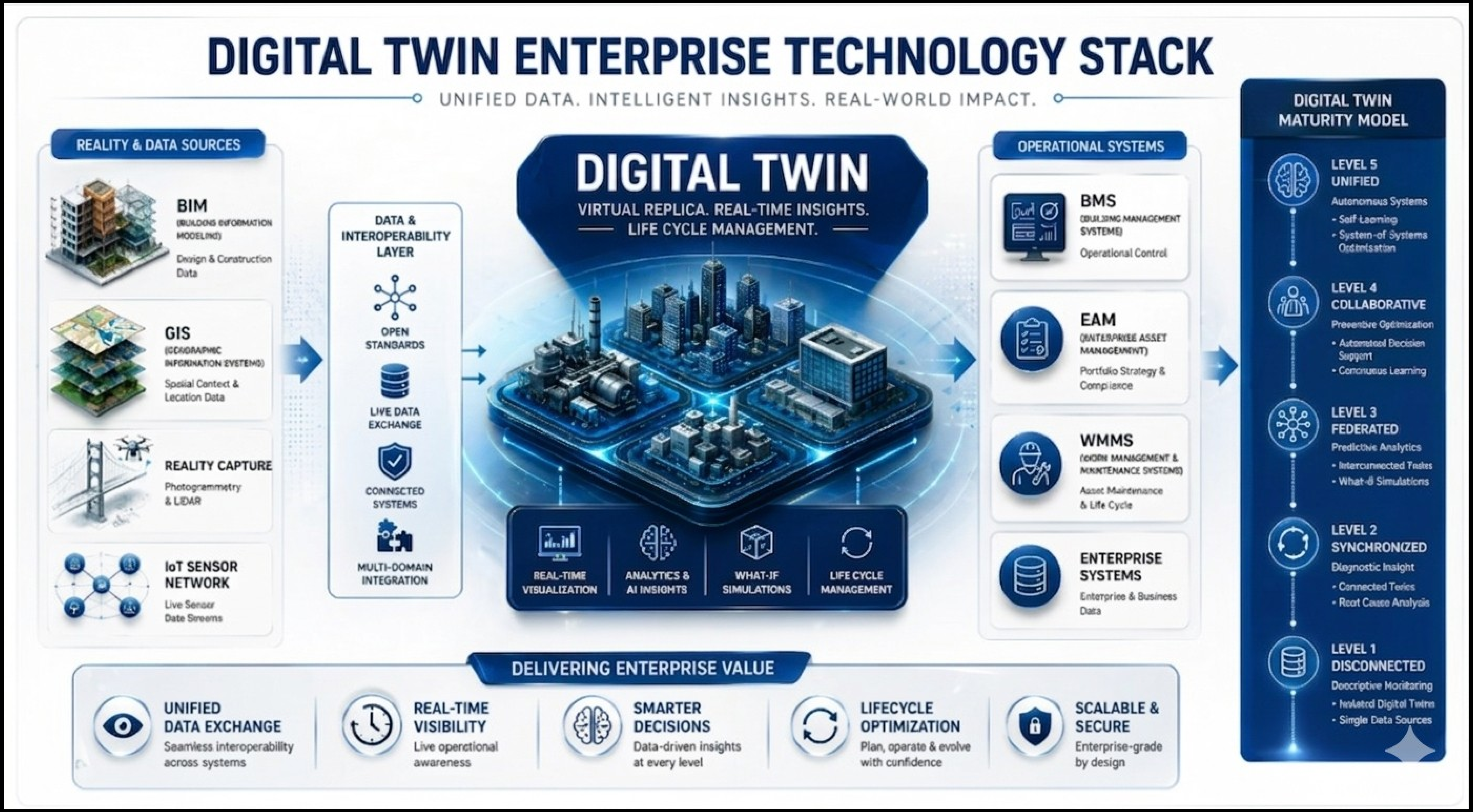


State of Digital Twins in 2026

- **Digital Twin projects are happening in every aspect of real-world systems**
  - Major industry partnerships and acquisitions have brought geospatial, BIM, and operational systems closer together
  - Major industry groups formed - Digital Twins Consortium – with technology vendor focus from NVIDIA, Siemens, Hitachi, Microsoft
  - Open standards around BIM, 3D, large geospatial data converging to enable more connected data and experiences across domains
- AI enabling easier and new connectivity
- **Customer and regulatory demand** for integrated Plan/Design/Build/Operate in context… and even **<u>handover of Digital Twins</u>** at asset construction



Things are getting complicated fast...



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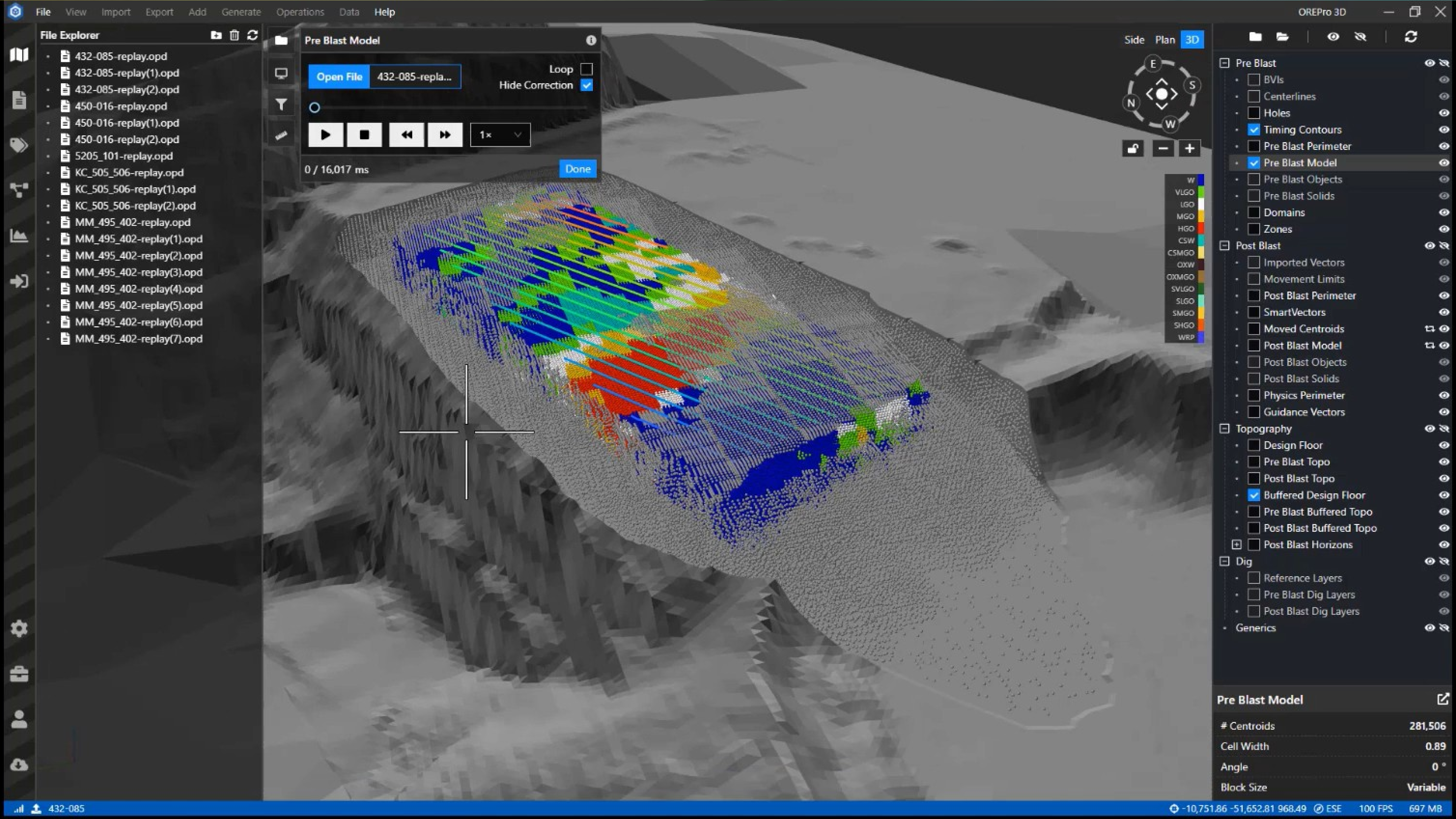
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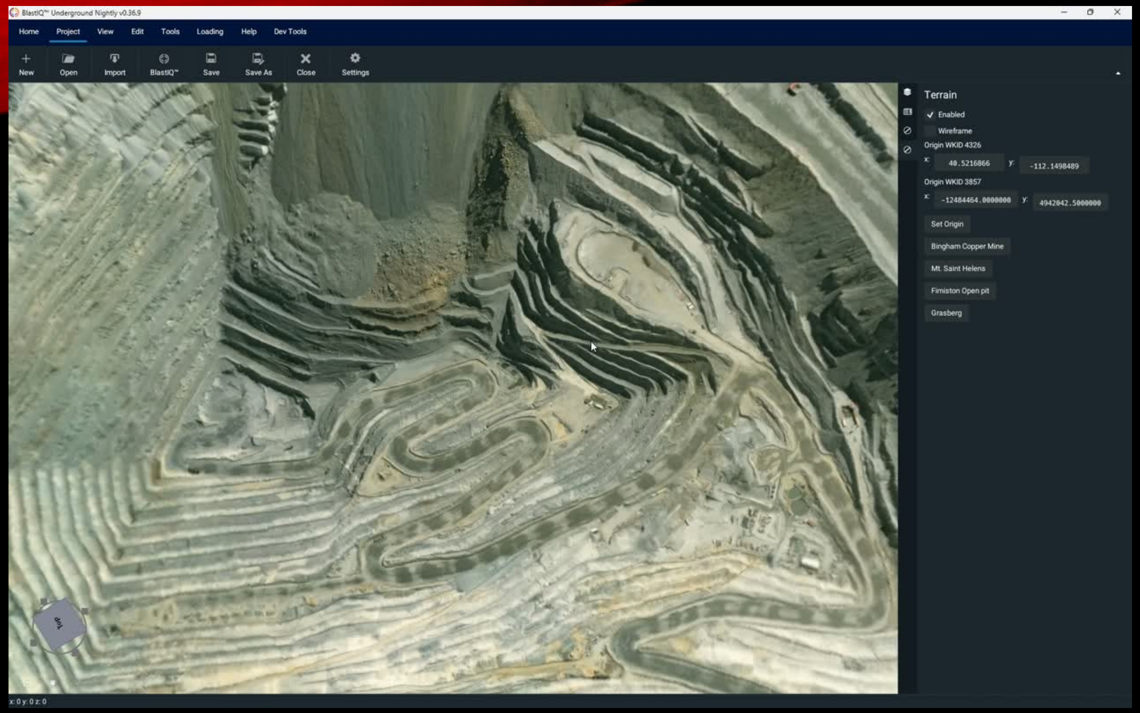
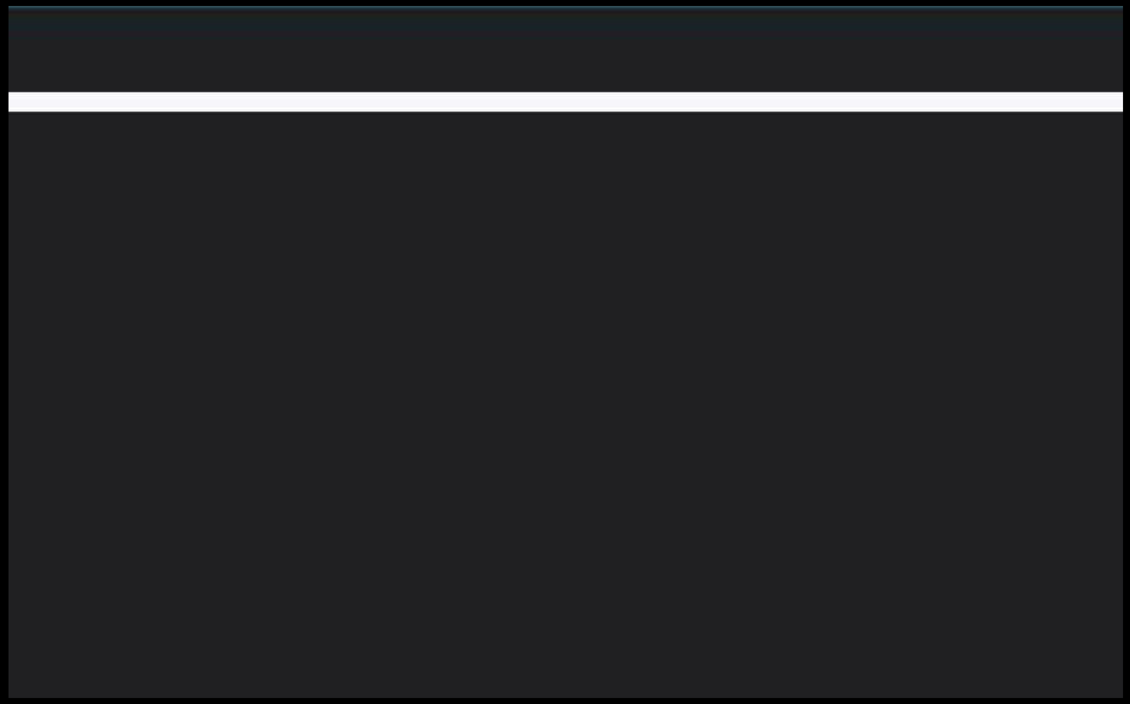
FORESIGHT

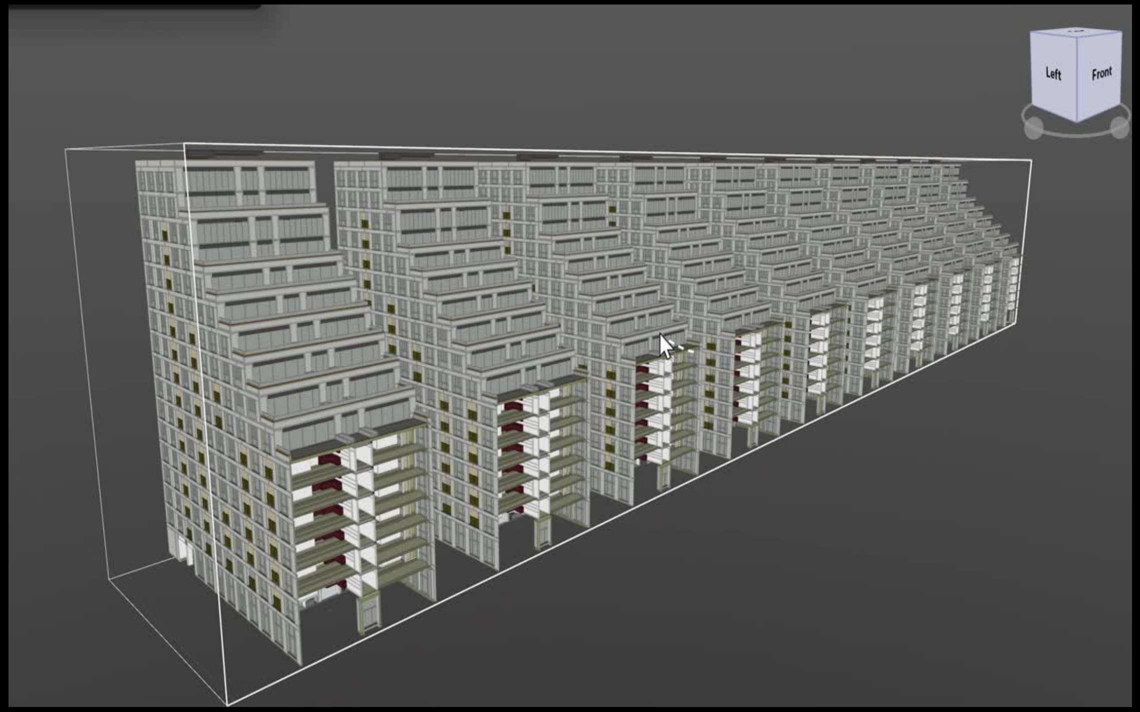
Foresight SDK: World's Most Powerful Volumetric Engine



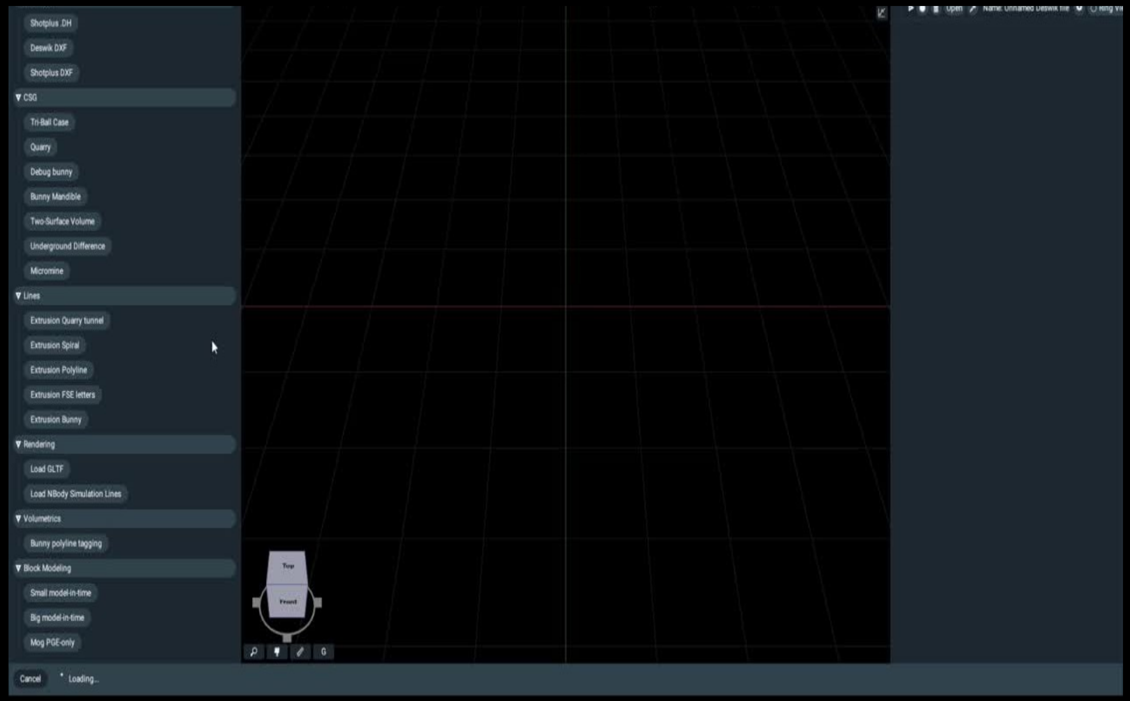
Streaming massive geospatial data



Volumetric calculation, controls libraries



High volume BIM and CAD data



Complex 3D formats and geometry manipulation

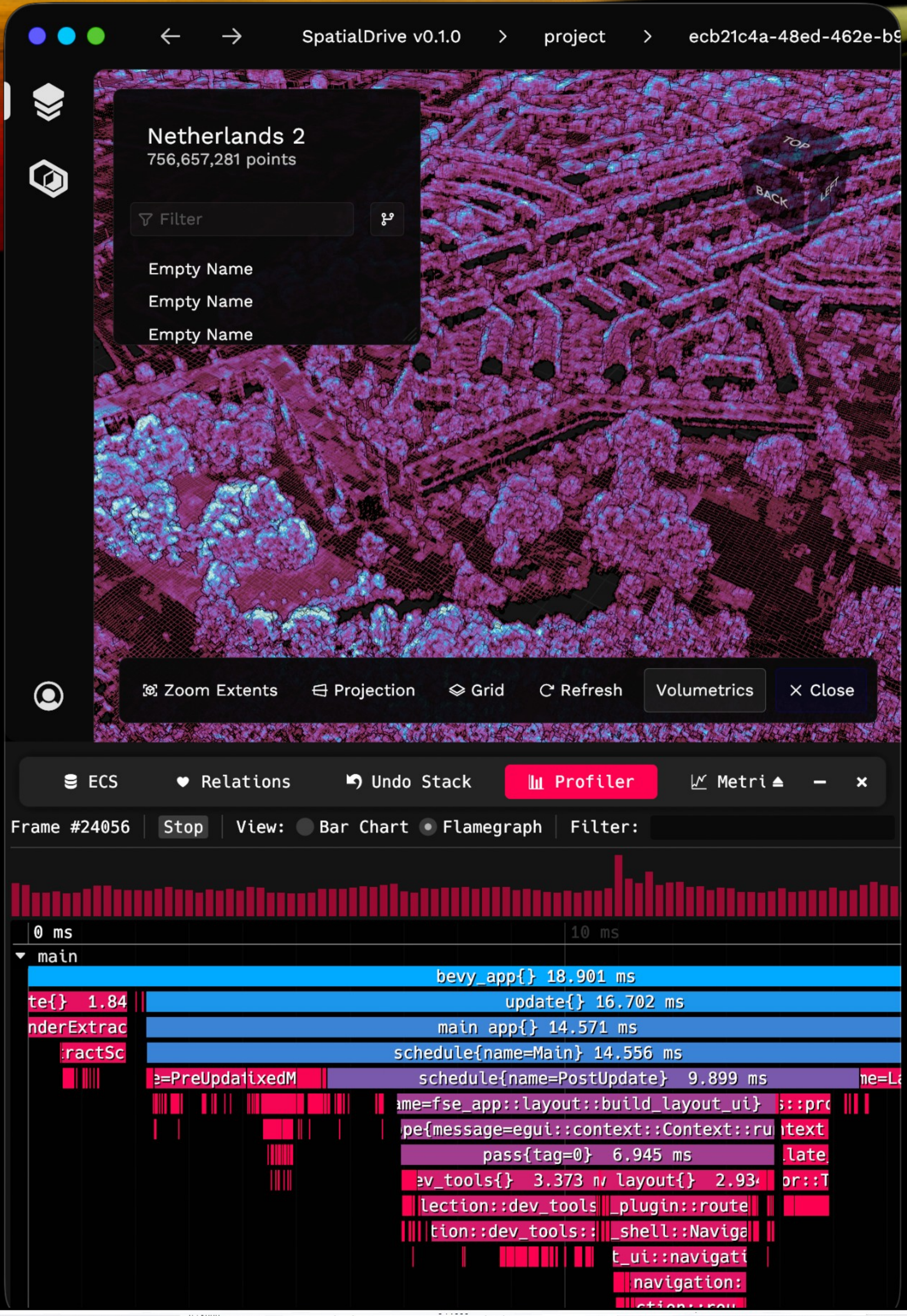
Mathematically correct, incomparably fast.

A new standard in volumetric mathematics.

Foresight SDK:

- **Rust-based**
- **Runs anywhere**: desktop, mobile, server, edge, browser
- **Built-in UI control library** or bring your own
- Ideal for **agentic coding**
- Patented streaming and storage compression for point clouds and voxels
- **Deployed in 100s of sites** in mining and related complex spatial domains

US Patent application No. 18/736,193, filed June 6, 2024.
PCT application No. US2025/032110, filed June 3, 2025.



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Foresight Spatial Labs: Tooling for Digital Twin applications

- Build tailored 3D and 4D apps for unique digital twin applications
- Avoid proprietary business models for application construction
- Access industry leading capability for 4D spatial data manipulation and data compression
- Rust-based, runs anywhere – web, desktop, mobile, edge
- Well-described AI coding friendly APIs for web and desktop

THANK YOU!

LET’S CONTINUE THE CONVERSATION…

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https://www.fslabs.ca/contact