

Offene interoperable Workflows

Engineering, Reality Capture, GIS, BIM, Untergrund, ...



Geoforum Berlin – Peter Rummel – Director of Infrastructure Policy Advancement

12. November 2025 12:15 – 12:30

Bentley[®]

Agenda

- 01 Wer sind wir – wofür stehen wir?
- 02 Ein Jahr danach
- 03 Komplexität transportieren
- 04 Praxisbeispiele
- 05 Zusammenfassung
- 06 Ausblick



01 Wer sind wir – wofür stehen wir?

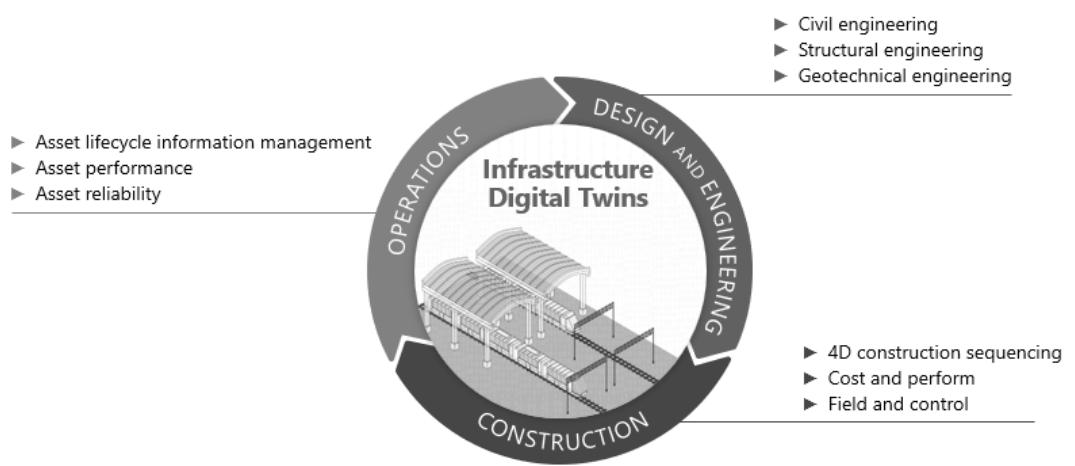
Wer sind wir - wofür stehen wir?

To **advance** the world's
infrastructure
for better quality of life

We **empower** people to design, build, and operate
better and more resilient **infrastructure** through the
adoption of our **intelligent** digital twin solutions



Comprehensive, Innovative, Open



Infrastructure Digital Twin



02 Ein Jahr danach

One year later



Bentley Systems Acquires 3D Geospatial Company Cesium

Combination Of Cesium Plus iTwin Offers Developers The Most Comprehensive Digital Platform For The Built And Natural Environment



Example of a design review process leveraging the Cesium integration with iTwin Platform. (Image courtesy of Bentley Systems)

Press Release



September 6, 2024

EXTON, Pa. – September 6, 2024 – Bentley Systems, Incorporated (Nasdaq: BSY), the infrastructure engineering software company, today announced it has acquired 3D geospatial company Cesium. Cesium is recognized as the foundational open platform for creating powerful 3D geospatial applications, and its 3D Tiles open standard has been widely adopted by leading enterprises, governments, and tens of thousands of application developers globally. Cesium ion, the company's SaaS platform, brings 3D geospatial experiences to more than 1 million active devices every month, while Cesium's open-source offerings have more than 10 million downloads.

Bentley's iTwin Platform powers digital twin solutions that are used by engineering and construction firms and owner-operators to design, build, and operate the world's infrastructure. The combination of Cesium plus iTwin enables developers to seamlessly align 3D geospatial data with engineering, subsurface, IoT, reality, and enterprise data to create digital twins with astonishing user experiences that scale from vast infrastructure networks to the millimeter-accurate details of individual assets—viewed from land, sky, and sea, from outer space to deep below the Earth's surface.

Bentley CEO Nicholas Cumins said, "A 3D geospatial view is the most intuitive way for owner-operators and engineering services providers to search for, query, and visualize information about infrastructure networks and assets. With the combined capabilities of Cesium and iTwin, infrastructure professionals can make better informed decisions in full 3D geospatial context—all within a single, highly performant environment."

Patrick Cozzi, CEO of Cesium, continued, "Joining Bentley marks an important milestone for Cesium as we continue our journey to create the best developer platform for the built and natural environment—founded on open standards and open-source technologies. The combined power of our two organizations and our shared commitment to openness will provide new opportunities for growth and create greater value for an already flourishing developer ecosystem that ranges from small start-ups to global enterprises."

An example is Komatsu, the largest construction equipment manufacturer in Japan, and the second largest in the world, which uses Cesium's 3D geospatial technology to monitor construction sites globally, track changes over time, compare architectural plans with real-world data, and run precise and near real-time measurements. With Cesium integrated into Bentley, Komatsu gains expanded access to world-leading digital twin technology.

bauma

The World's Leading Trade Fair for Construction Machinery, Building Material Machines, Mining Machines, Construction Vehicles and Construction Equipment



Bentley Systems Partners With Google To Bring Powerful Geospatial Context And Capabilities To Infrastructure

Collaboration Enables Use Of Google 2D, 3D Geospatial Content Within Bentley's Applications And Platforms To Deliver Actionable Insights To Infrastructure Professionals



Google 3D tiles of Vancouver, enabled through Cesium technology, that will be available within iTwin. (Image courtesy of Bentley Systems)

Press Release



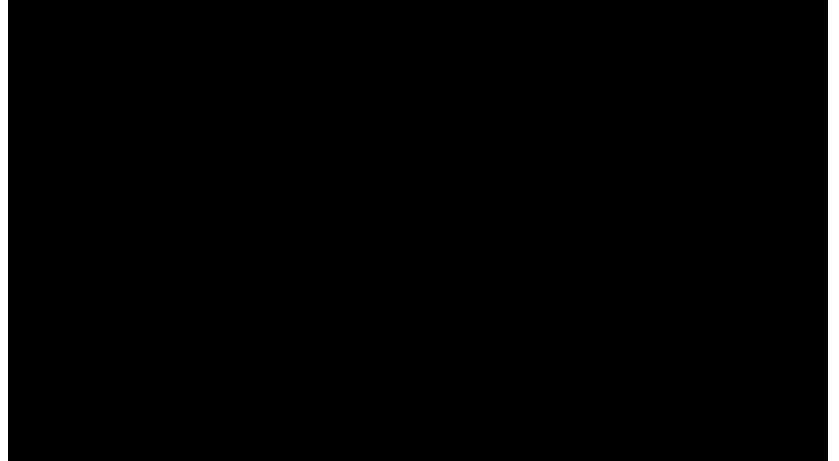
October 9, 2024

VANCOUVER, CA – (Bentley Systems' Year in Infrastructure 2024) – October 9, 2024 – Bentley Systems, Incorporated (Nasdaq: BSY), the infrastructure engineering software company, today announced a strategic partnership with Google to integrate Google's high-quality geospatial content with Bentley's infrastructure engineering software and digital twin platform to improve the way infrastructure is designed, built, and operated.

As a digital representation of the physical world, digital twins unlock meaningful value and insights throughout the infrastructure lifecycle, from project planning and design through construction and asset operation. By leveraging the engineering data created and managed in Bentley software alongside Google's geospatial data, AI and analytics, and cloud technologies, engineers can design and manage infrastructure in context and at scale to address today's most urgent challenges, from mitigating climate risk to maintaining aging infrastructure.

Through the partnership, Bentley software users and developers can use Google Maps Platform's geospatial content, including Google's stunning Photorealistic 3D Tiles, for real-world geospatial context and immersive 3D experiences in their digital workflows. The partnership complements Bentley's recent acquisition of Cesium, the foundational open platform for creating powerful 3D geospatial applications. Cesium is the creator of the 3D Tiles open standard used by Google. Bentley is also collaborating with Google Cloud to deliver AI-driven insights for asset analytics.

Bentley CEO Nicholas Cumins said, "By combining Google's extensive geospatial content and cloud capabilities with Bentley's infrastructure engineering software and digital twin platform, infrastructure professionals can improve their work and ensure projects and assets are created and operated with greater resilience and sustainability. This partnership demonstrates how open standards, such as 3D Tiles, can help infrastructure professionals evolve their practices by leveraging the power of geospatial context."



[Bentley Systems, Incorporated \(Nasdaq: BSY\)](#), das Unternehmen für Infrastruktur-Engineering-Software, gab heute die Verfügbarkeit von Reality-Modeling-Services in Cesium bekannt und baut damit seine offene Plattform für die bebaute und natürliche Umwelt weiter aus. Weiterhin wurden auf Cesium basierende raumbezogene Funktionen für die Projektabwicklung und die Anlagenleistung sowie eine neue immersive Anwendung für die Einbindung von Infrastrukturteams und Projektbeteiligte vorgestellt, die ebenfalls auf Cesium basiert.

Seit der Übernahme von Cesium vor einem Jahr verzeichnet Bentley erhebliche Fortschritte bei der Integration der Technologien beider Unternehmen. Damit stärkt Bentley sein Portfolio und ermöglicht Entwicklern die Erstellung von Anwendungen, die Infrastrukturdaten in Echtzeit und im vollständig raumbezogenen Kontext visualisieren.

„Unsere Vision für das Infrastruktur-Engineering beruht auf Offenheit“, sagte Patrick Cozzi, Chief Platform Officer bei Bentley. „Durch die Integration der Funktionen von iTwin und Cesium entsteht diese offene Plattform für die bebaute und natürliche Umwelt, die Infrastrukturfachleute alle notwendigen Daten für den Entwurf, den Bau und den Betrieb in einem realistischen Kontext zur Verfügung stellt.“

Erweiterung von Cesium um Reality Modeling und KI-gestützte Analysen

Bentley erweiterte Cesium ion um die Reality-Modeling-Services von iTwin Capture und schuf damit eine vollständige und automatisierte Pipeline von der Datenerfassung bis hin zur Visualisierung von Geodaten. iTwin Capture erstellt aus Bildmaterial mithilfe KI-gestützter Erkennung von Merkmalen realitätsgenauere Modelle in technisch einwandfreier Qualität. Gleichzeitig können Entwickler mit Cesium ion Inhalte für ihre 3D-Geodatenanwendungen in der Cloud erstellen und hosten.

Mit den neuen Funktionen für das Reality Modeling lassen sich mit Cesium ion detaillierte 3D-Visualisierungen wie Reality Meshes, Punktwolken und Gaußsche Splats direkt aus dem Bildmaterial erstellen. Die durch KI beschrifteten Visualisierungen können dann über offene Standards in Anwendungen gestreamt werden. Durch die Erstellung eines präzisen, digitalen Modells der vorhandenen bebauten und natürlichen Umgebung in technisch einwandfreier Qualität und dessen Bereitstellung als detaillierter raumbezogener 3D-Kontext können Infrastrukturfachleute im gesamten Lebenszyklus der Infrastruktur fundiertere Entscheidungen treffen.

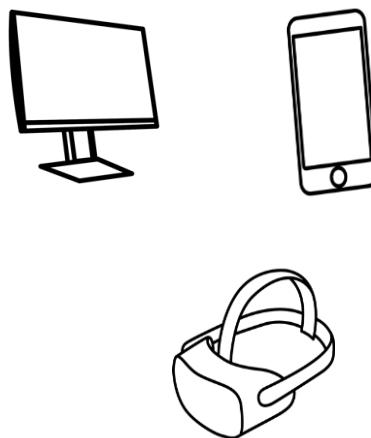
03 Komplexität transportieren

Daten – Anwendung - Anforderung

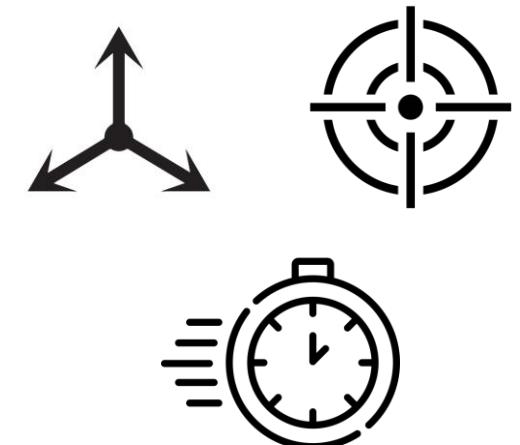
Deine Daten



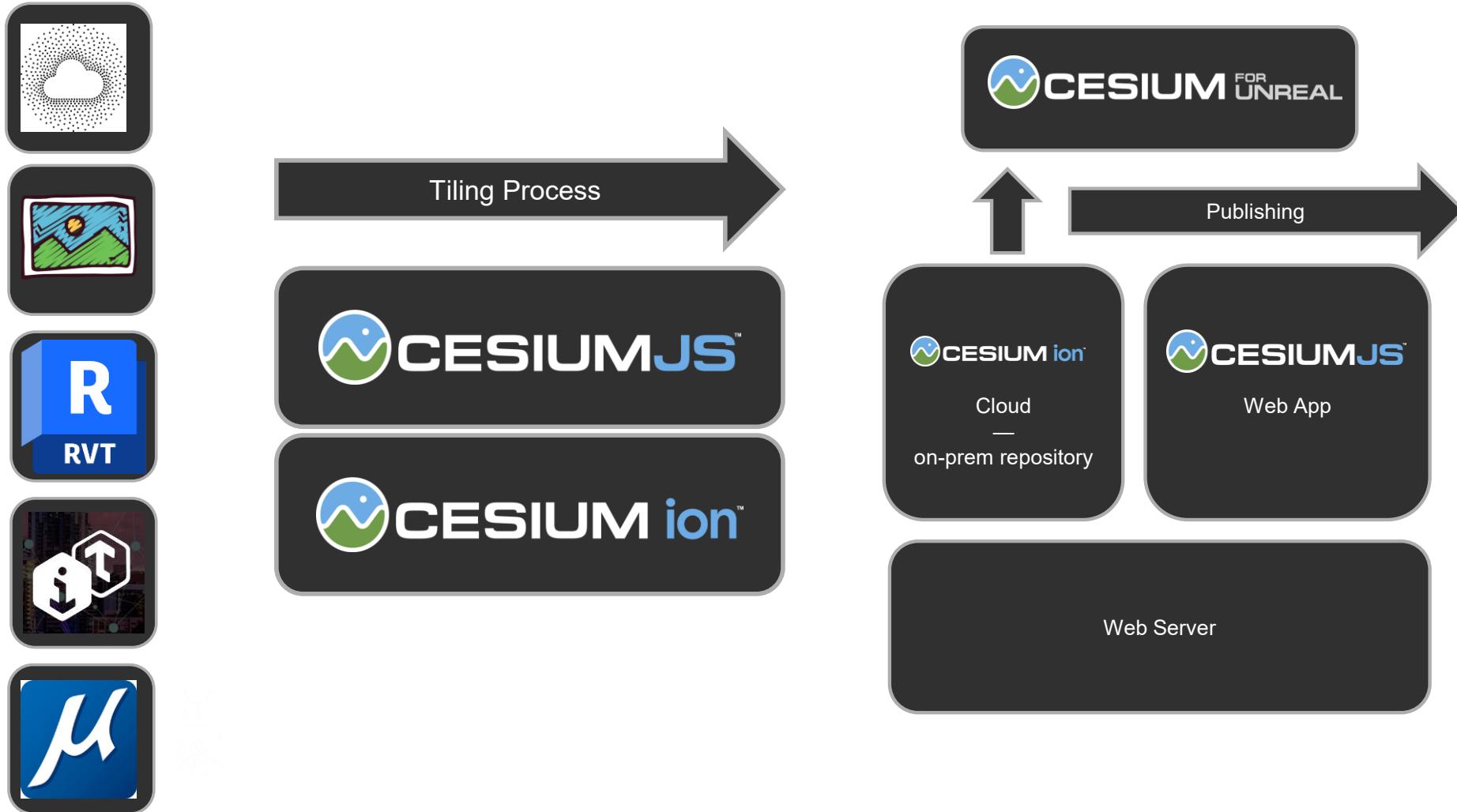
Visualizieren & Analyzieren



Anforderungen



Prozess Architektur



Offen für Offenheit



04 Praxisbeispiele

Praxis Beispiele



*Simplifying the
Complex*



*Open &
Interoperable
Workflows*



*Value
Acceleration*

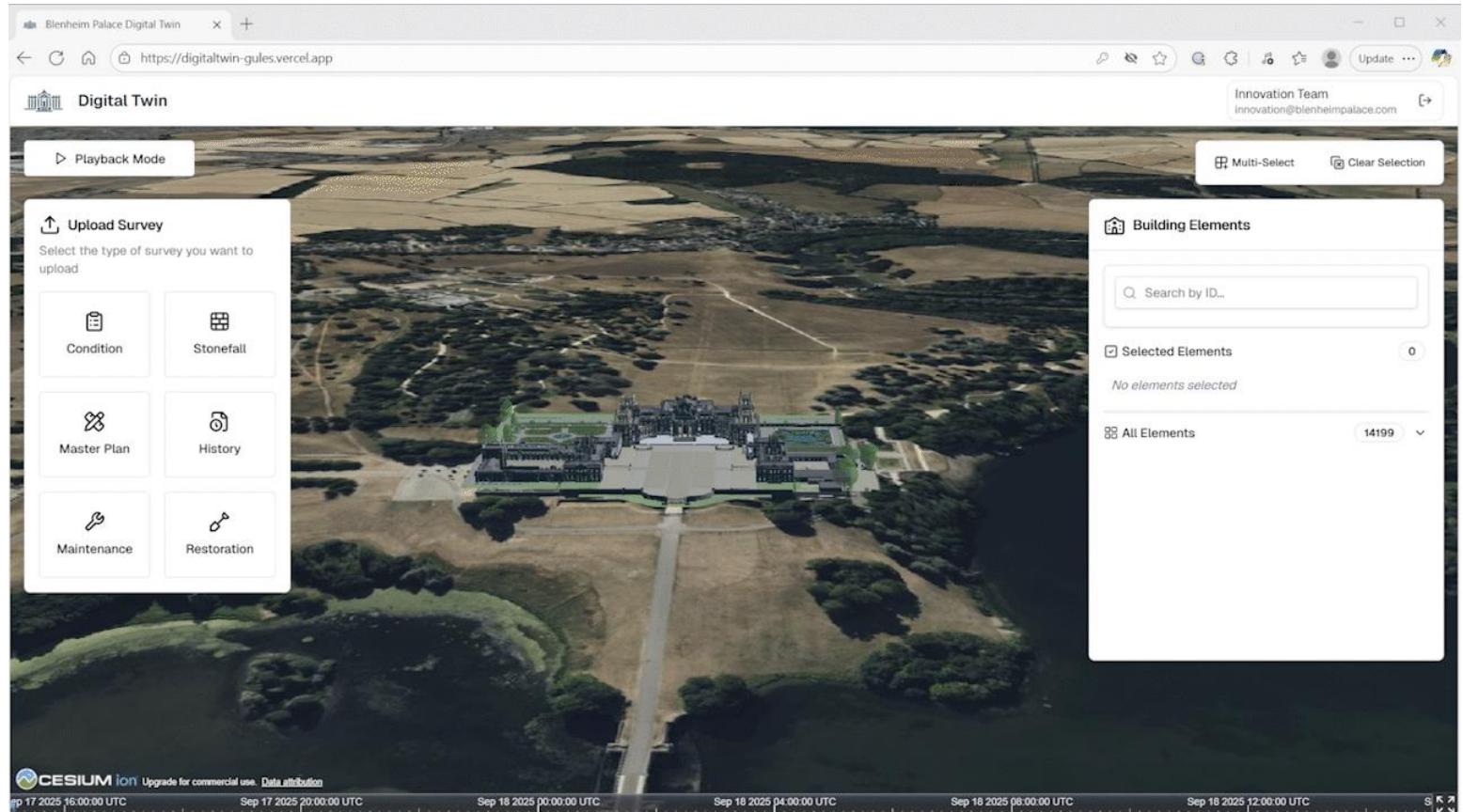
Blenheim Palace - Anwendungsfall



Blocker: BIM model



Multiple end users



Space Force - Anwendungsfall



Co-simulation of a rocket launch

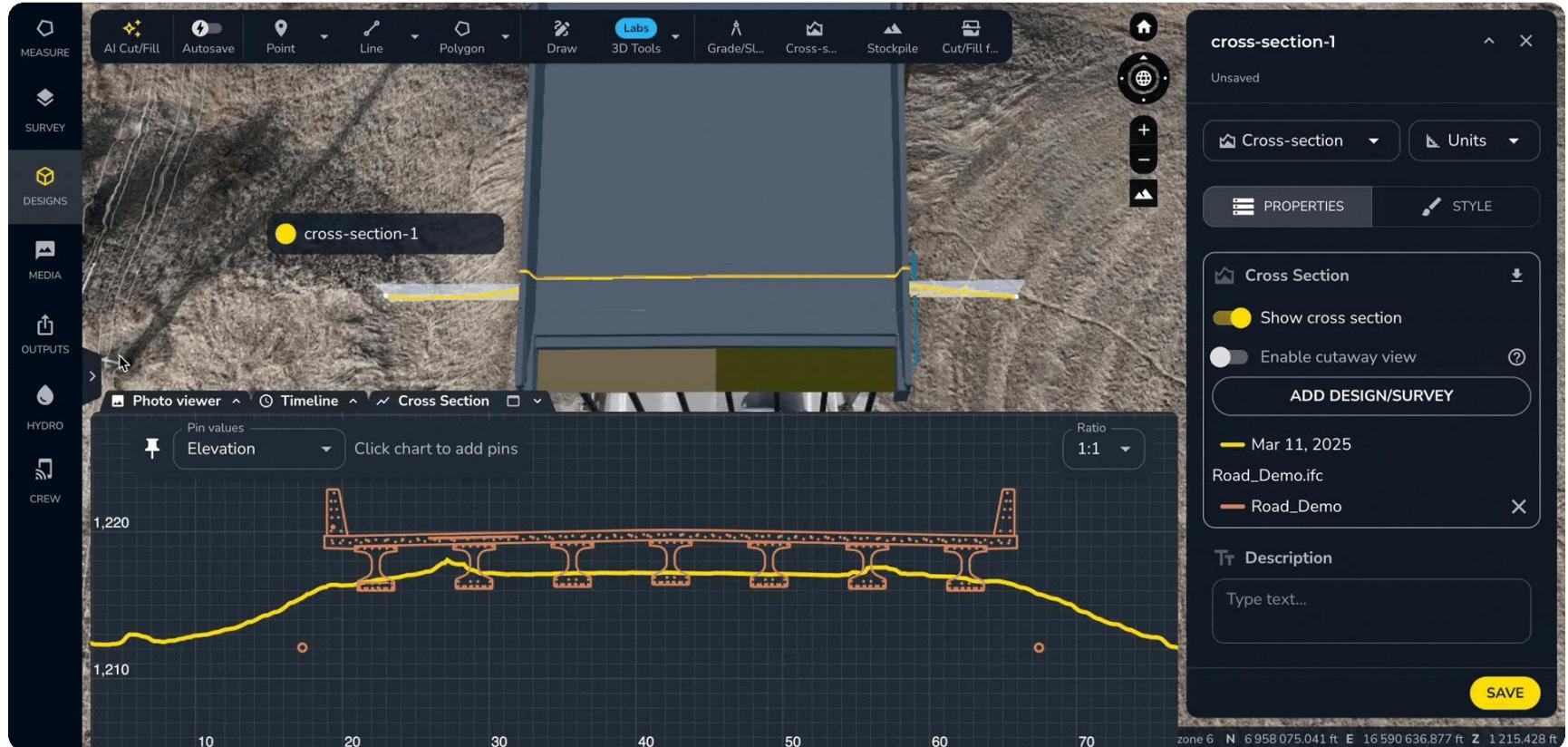
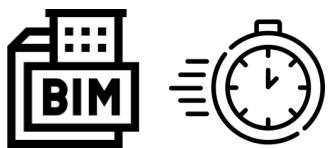


PropellerAero - Anwendungsfall

propeller

 CESIUMJS™

 propeller 3D Tiles™



05 Zusammenfassung

Zusammenfassung



- Daten nehmen an **Umfang** und **Komplexität** zu
- **Offenheit** ist ein zentraler Bestandteil bei Datenformaten, API und Viewern
- **Frei, offen, flexibel** – für jedes Anforderungsprofil
- **mp4-Analogie**
Datenvolumen / Geschwindigkeit / Qualität
- **Daten – Modelle – Konzepte - Visionen**
- Verschiedene „**Realitäten**“



06 Ausblick

Nächste Schritte & Empfehlungen

- **BIMWORLD Munich** 26.-27. November 2025 12:45 -13:15
BIM + CIM / Smart City
GPS coordinates: Messe München / ICM
Longitude: 11.610602 / Latitude: 48.198273
- **VDI Wissensforum Köln** 3.-4. Dezember 2025 – BIM im Infrastrukturbau
- **Year in Infrastructure 2025** –
Gewinner 2025 – Keynotes and Announcements
(Cesium / Infrastructure Cloud / AI)
- **Twin Talks** Rome 14. November
Transforming Infrastructure Performance
London 17. November
Twin Talks Warschau 8. Dezember
www.infrastructurepolicyadvancement.com
- **Cesium Webinar** Einführung - Aufzeichnung.
Jederzeit abrufbar auf der Bentley Systems Seite.
- www.cesium.com



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