Bentley®

Create, visualize, and analyze digital twins of infrastructure assets

Digital twins are enablers of world-class operations and maintenance. They help operate assets more efficiently at higher capacity, extend asset life, and can increase whole-life value 10-40%.

iTwin Services are a set of cloud services that integrate engineering information created by multiple design tools into a living digital twin, aligning engineering data, reality data, and other associated data with no disruption to current tools or processes. Users can "4D-visualize" and track engineering change including changes in real-world conditions from IoT connected devices, sensors, and drones.

Why customers use iTwin Services

• Immersive Visualization

• Timeline of Change

• Analytics Visibility

• Drive savings through actionable insights and predictive maintenance

• Reduce reactive responses to faults and failures

• Improve compliance and safety and reduce project risk

Align Digital Twin Information

Integrate disparate data into a living digital twin with no disruption to existing workflows or design tools
Transform data from any design application regardless of format or source into an aligned structure
Integrate data from IoT connected devices including drones, sensors.

Reduce time and resources spent on costly data aggregation and integration

Visualize and Track Change

Know who changed what when
Provide change notifications to the right person at the right time
View and understand the cost and time impact of change
Coordinate with supply chain and visualize changes, improving efficiency and accessibility

Improve safety and reduce risk by tracking changes and Identifying cost and schedule impact

Insights for Better Business Decisions

Help engineers understand current and future performance
Head off problems before they occur, prevent downtime, and plan for the future by using simulations
Apply artificial intelligence (AI) and machine learning (ML) in simulations and decision support

Drive savings through actionable insights, improve failure detection, reduce reactive responses to faults and failures

"Data centric design processes allow for the virtual build of the plant before anyone hits the field. We can simulate construction and optimize the productivity at each workface. The digital processes result in complete engineering – no claims for scope omissions, and we are proud that our construction rework rates are typically less than 2%."

- Global Managing Director for Engineering, Hatch

How iTwin Services work, to achieve business benefits

iTwin Services combine and align information from many sources – CAD files, BIM files, databases, schematics, and spreadsheets and more – as consistently understood digital components in a federated, cloud-based repository.
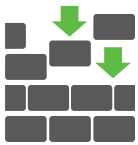
Reduce CapEx

- Eliminated 45% of drawings
- Shortened design time by 1.5 months
- No claims for scope omissions
- Less than 2% rework
- Schedule reduction 4 -12%

Reduce OpEx

- Reduced ramp-up from 6 months to 1 week
- 10% fewer maintenance activities
- 25% fewer forced outages
- Increased availability by 10%
- 15% lower operating costs

Reduce TotEx

- Improve Monitoring
- Minimize Outages
- Improve Safety
- Extend Asset Life
- Better Future Designs

Open Wins!

Our promise to you

Over the long term, open systems win over closed systems. When we say open, we mean our digital twin platform is open to whatever engineering applications and BIM tools practitioners are using; it is open to whatever repositories and files systems their data is stored in; and it is open in file formats and schemas.

An offer to get you started

iTwin Services provide infinite scalability and connectivity for a multitude of digital twin use cases and unlimited users.

An open-source JavaScript library (iModel.js) is available on GitHub and can be used to create applications to run web-browser, cloud, desktop and disconnected on mobile devices.
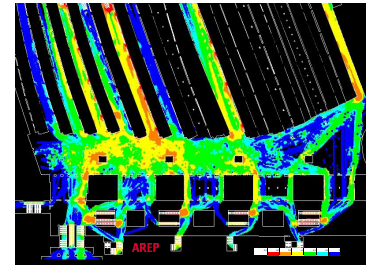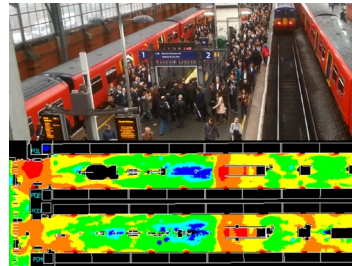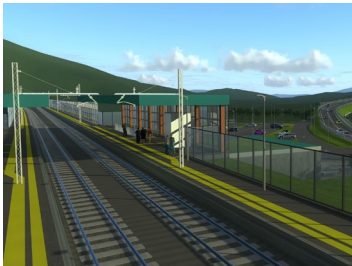
Tangible Benefits / Desired Outcomes

Digital twins enable users to visualize the entire asset – in a web browser, on a tablet, or with a HoloLens mixed reality headset – check status, perform analysis and generate insights in order to predict and optimize asset performance. Architecture, engineering and construction firms can build digitally before they build physically, and asset owner-operators can plan out and de-risk maintenance activities before they carry them out in the real-world. Visualization and contextualization of engineering data lead to better informed decision-making and stakeholder engagement throughout the asset lifecycle.

Why Bentley?

Bentley Systems is the leading global provider of software solutions to engineers, architects, geospatial professionals, constructors, and owner-operators for the design, construction, and operations of infrastructure, including public works, utilities, industrial plants, and digital cities.

Spanning infrastructure engineering, Bentley's iTwin Services are fundamentally advancing BIM and GIS through 4D digital twins.

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