InRoads’ OpenRoads Technology for 3D Modeling

Ron Gant, P.E. (TX)
Industry Marketing Director, Roads
OpenRoads technology extends the capabilities of information modeling

Bentley Introduces Shared ‘OpenRoads’ Information Modeling Functionality in InRoads, GEOPAK, and MXROAD V8i (SELECTseries 3)

Final Stages of Product Convergence Deliver Benefits of Cumulative Innovations for Roadway Design

PHILADELPHIA – Be Together: The Bentley User Conference – May 15, 2012 – Bentley Systems, Incorporated, the leading company dedicated to providing comprehensive software solutions for sustaining infrastructure, today introduced at this gathering of infrastructure professionals from around the world, the shared OpenRoads information modeling functionality in its InRoads, GEOPAK, and MXROAD V8i (SELECTseries 3) products for roadway design. The new common code in each represents the final stages in the evolutionary convergence of functional innovations among all three products – an evolution that began with the introduction of Roadway Designer. Users of any or all of these products can now benefit from a single user experience featuring common innovations that increase the potential of information modeling in road design, construction, and operations. The new functionality, which includes immersive, on-demand visualization, design intent capture and persistence, hypermodeling, information mobility, and construction-driven engineering, can be readily applied without disruption to existing workflows due to Bentley’s long-standing commitment to continuous innovation with streamlined adoption.

Bentley Systems CEO Greg Bentley said, “We have conscientiously planned for the users of InRoads, GEOPAK, and/or MXROADS to reach the adoption of OpenRoads information modeling in a continuous and nondisruptive manner. This powerful new functionality is being delivered in the SELECTseries 3 releases of these products and should be enthusiastically previewed and adopted by all users as soon as possible.”
Bentley Civil/Transportation Design Today

**InRoads**
- Road, site, survey, and drainage design. InRoads is the design standard in 26 US DOTs, 6 Canadian MOTs, USACE, and numerous road organizations around the world.
  - **Power InRoads** (InRoads with built-in CAD engine and Mapping capability)

**GEOPAK**
- Road, site, survey, and drainage design. GEOPAK is the design standard in 18 US DOTs, 1 Canadian MOT, and the FHWA.
  - **Power GEOPAK** (GEOPAK with built-in CAD engine and Mapping capability)

**MXROAD**
- Road, site, survey and drainage design. MXROAD is the design standard in 1 US DOT, and many road authorities throughout Europe, Asia, and the Middle East.

**Power Civil for Country (20+ products)**
- Power InRoads localized by country. PCfC is utilized in 20+ countries within Europe, Middle East, South Africa, Latin America, and Brazil.
What is OpenRoads

OpenRoads provides a common **technology** for InRoads, GEOPAK, MXROAD, and PowerCivil for “Country”.

OpenRoads technology offers immersive interaction of

- Survey
- Geometry
- Terrain modeling
- Corridor modeling
- Dynamic cross sections
- Civil cells
- Design intent
- Design-time visualization
OpenRoads Technology

Survey

- Supports almost all civil/survey data formats
- Combines disparate data types
- Interactive editing
- Dynamic updates
- Automated terrain creation

Eliminates expensive and redundant data conversions
OpenRoads Technology

Geometry

- Interactive
- Heads-Up display
- Rules based
  - Design Intent
  - Remembers how you built it
- Dynamic profile window
- Dynamic annotation
- Civil AccuDraw
- Design standards

Improves quality with integrated designs
OpenRoads Technology

Corridors
- Immersive
- Context sensitive
- Parametric
- Dynamic 3D models
- Integrated with site modeling

Increase design productivity with objects associated to each other in the design.
OpenRoads Technology

Dynamic Cross Sections

- Updates on the fly
- Reduces time
- Scalable
- Intelligent
- Editable
- Multiple designs
- Structures
- Any 3D element

Reduce production time with dynamic updates reflected throughout the design and modeling process.
OpenRoads Technology

Civil Cells
- Dynamic
- Intelligent
- Ensures standards
- Reduces project costs
- Reusable

Accelerate design production and ensure standards to guarantee design quality.
Design Time Visualization

- Built-in visualization tools
- Visualization on demand

Reduces cost. No additional software, staff, or workflow required.
OpenRoads Technology Intelligent Model

- Survey Data
- Geospatial Data
- Point Clouds
- Design & i-model
- Automated Machine Guidance
- Resurfacing
- Planing
- Preliminary Design
- Site and Road Design
- Design to Construction
- Construction
- Operations and Maintenance
- Rehabilitation

Engineering Models

Industry Standards
Point Clouds
What is Information Mobility

- Allows project teams to share information across both the infrastructure lifecycle and project disciplines in a controlled and secured fashion – regardless of file formats or devices used.
Greater Information Mobility

- Better coordination and teamwork
- More and better feedback
- Broader understanding
- Integrated Project Delivery
Navigator Mobile

- Intuitively navigate and review 3D models
- Publish mobile i-models with Navigator Mobile Publisher and access them through ProjectWise Explorer Mobile
- Focused on review today, but will support markup, status visualization and progressing soon
- Available now for iPad with Android & Windows 8 support to follow
What is Information Modeling

• Enables creation and integration of design, documentation, and analysis in a federated repository for design and construction information.
Benefits of Information Modeling

• Better coordination during design and construction
• Earlier identification of conflicts
• Lower costs and better performing assets
Information Modeling Experience

We’ve been doing BIM for 20 years – we just didn’t know what to call it!

Leif Malm
SWECO
Thank You!

www.bentley.com/openroads