Bentley®
Advancing Infrastructure

PRODUCT DATA SHEET

CUBE

Predictive Transportation Modeling and Simulation

CUBE is a powerful tool for transportation professionals to clearly visualize and easily test any number of scenarios to compare potential benefits and become aware of unexpected consequences. The information provided from these scenarios saves time, money, review cycles, and debates as changes are proposed before entering the design process.

CUBE DELIVERS A TRUE MULTIMODAL APPROACH

CUBE supports any mode of transport, delivering a true, multimodal approach with feedback interactions between different modes, such as pedestrians, bikes, cars, freight, buses, bus rapid transit, rail, air, and water. At the macroscopic level, CUBE is used for strategic and multimodal planning, including studying major roadway networks and public transport systems with a great level of detail. These macroscopic models treat the entire volume of traffic traveling between an origin and destination as a single unit to evaluate the lowest-cost path for the aggregated traffic volume and compute congestion effects on a strategic scale, using volume-capacity ratios and estimating resulting speeds.

EXTENSIONS ENHANCE CAPABILITIES

CUBE is comprised of the primary product and its extensions to enhance capabilities for specialized tasks.

- CUBE – supports macroscopic movement of people and vehicles with the customization necessary to create the best plan for your area without limitations.
  - Network – Network editing.
  - Matrix – Demand modeling, big data analysis.
  - Highway – Zone-to-zone route analysis.
  - Public Transport – Public transport modeling.
  - Analyst – Matrix estimation.
  - Cluster – Multicore processing.
- CUBE Cargo – a library of programs for modeling freight demand throughout a city or at a regional and long-distance scale, to understand or predict the impact of commodity flows.
- CUBE Land – a library of programs for modeling land use. Easily integrated with any transportation model, it predicts land use changes given modifications to the transportation system.
- DYNAMEQ® – Vehicle-based simulation and dynamic traffic assignment to simulate and evaluate traffic studies with a detailed model of your entire city.
- AGENT™ – Assemble, calibrate, and apply agent-based and advanced travel demand models in one simple platform.

SYSTEM REQUIREMENTS

MINIMUM: Intel Pentium 4 or AMD Athlon, 1 GB RAM, video adaptor with 24-bit capable graphics adapter and 64 MB video memory

RECOMMENDED: Intel Core i5, i7, Xeon or better; AMD Phenom II, Athlon II, FX-Series, A-Series APU or better; 1 GB RAM; video adaptor with 32-bit capable graphics adapter; 512 MB or more video memory

OPERATING SYSTEM: Windows 10, Windows Server 2019

CUBE At-A-Glance

- Supports macroscopic and mesoscopic modeling
- Enables informed transportation and land use development decisions
- Improves communication with stakeholders
- Expands access to robust analytics
- Open platform that supports building and calibrating models of any type

DATA MANAGEMENT

- Create, edit, and visualize data
- Utilizes relational databases for easy data management

SCENARIO MANAGEMENT

- Define and organize an unlimited number of scenarios
- Easily document input and assumptions
- Reproduce results for hundreds of archived alternatives

MODEL MANAGEMENT

- Visual flow chart style user interface for intuitively building models
- Clearly document process flows
- Pull-down menus to choose model functions
- File linkage for networks and zonal data, and file creations for intermediate steps
- Simple click and drag to link data from one model step to another
- An easy-to-use interface to run part of the model or the whole process

LIBRARY OF PROGRAMS FOR MODELING

- Traditional four-step demand models with feedback loops
- Agent or activity-based models using AGENT
- LUTI modeling with complete integration between land use and transport modeling
- Combined equilibrium models
- Stand-alone strategic modeling

REPORTING

- Built-in reporting tools
- Table and chart format to support scenario analysis and comparisons
- Organizes reports produced by models in a user-defined and structured way

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