## Pitney Bowes Spectrum™ Enterprise Location Intelligence Solution

**LOCATION INTELLIGENCE MODULE**

**TRANSFORM YOUR DATA INTO ACCURATE LOCATION INFORMATION**

## Product overview

No two organizations use spatial data exactly the same. It is even rare for different departments of the same organization to do so. The Pitney Bowes Spectrum Location Intelligence Module provides precise information to individuals with diverse organizational responsibilities such as logistics, marketing, customer service, and network performance. This capability is a key for organizations to not only streamline the location intelligence process, but also to provide a centralized operational, decision making and business workflow management system throughout the whole organization that enables organizations to establish and apply an enterprise deployment of location intelligence. Businesses can easily leverage, centralize and integrate spatial data across the organization and eliminate organizational silos by providing a "common operating picture" across various units of the organization.

The Pitney Bowes Spectrum Location Intelligence Module combines the best of Spectrum data quality and location intelligence to produce sophisticated algorithms that help to streamline operations and decision making across the enterprise.

## Benefit

### Powerful Spatial Applications

Many business decisions and daily operational tasks require the use of geospatial information. In fact 70% of all business data contains a location component. Moreover, location insight is no longer restricted to GIS. Location data is an enterprise asset and needs to be managed as such in order to enable business processes that can benefit from accurate and timely location intelligence. Spectrum Location Intelligence Module empowers users to easily confirm geospatial locations within geospatial boundaries from a specific location and a list of targeted geospatial locations to:

- **Find Closest Site** – Using a location's latitude and longitude coordinates as input and a spatial database of targeted location latitude and longitudes, you can determine which sites are closest.

- **Find Point in Polygon** – Using a spatial boundary database (Polygon) and latitude/longitude coordinates of locations (Points), identifies the geographic inclusion or exclusion of the points within the polygon. This spatial analysis determines whether or not a given location resides in an area of interest. Further, the distance to the edge of the Polygon is reported with the option of including a "buffer" around the Polygon to identify those locations that are close to the edge.

### EXPECTED ROI

Making sound business decisions often requires that you have location intelligence beyond an address. By integrating the best of data quality capabilities with rich location intelligence, the Pitney Bowes Spectrum Location Intelligence Module delivers location-based intelligence to every business process that relies on accurate location data.

- Allows more efficient and effective segmentation and targeting
- Reduces costs associated with service and delivery
- Helps to reduce risk and increase customer service
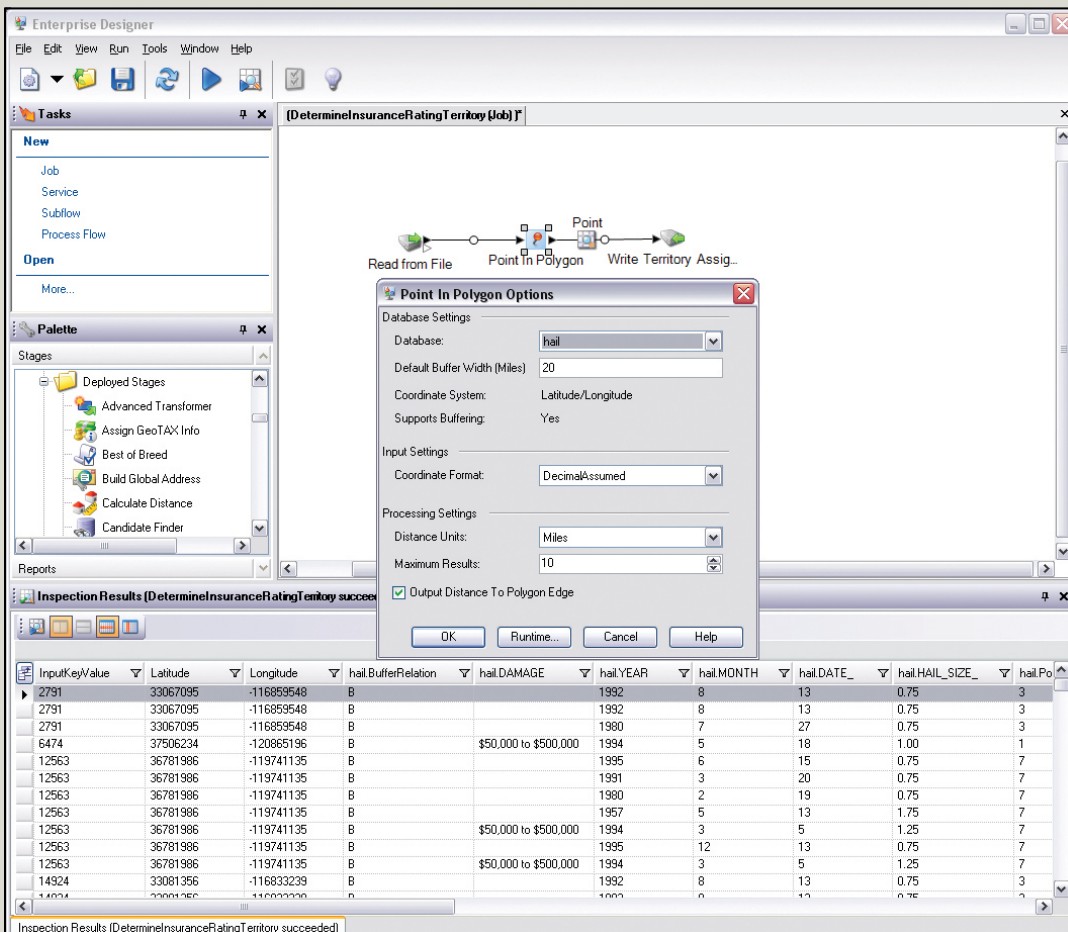- Sophisticated analytics helps to optimize business operations

**CRITCHLOW**™

**Pitney Bowes**
Software

**THE LOCATION INTELLIGENCE MODULE COMBINES THE BEST OF SPECTRUM DATA QUALITY AND LOCATION INTELLIGENCE TO PRODUCE SOPHISTICATED ALGORITHMS THAT HELP TO STREAMLINE OPERATIONS AND DECISION-MAKING ACROSS THE ENTERPRISE.**
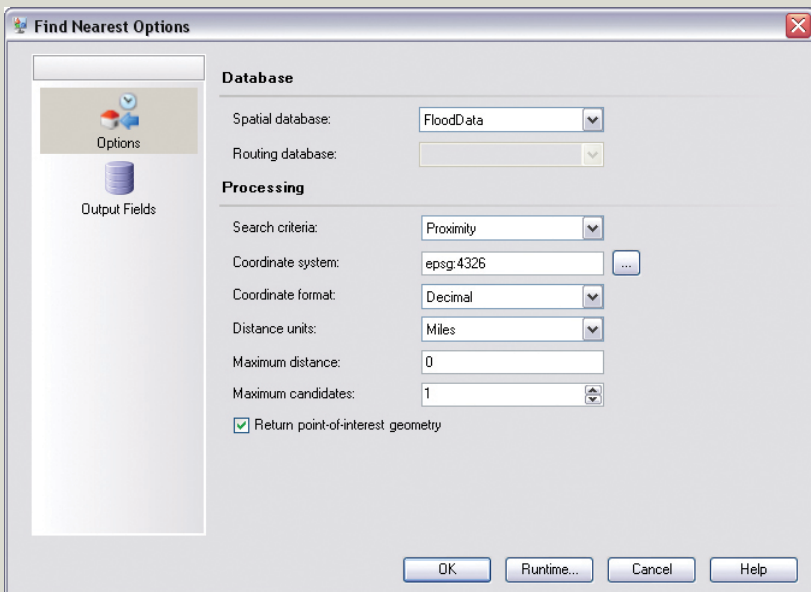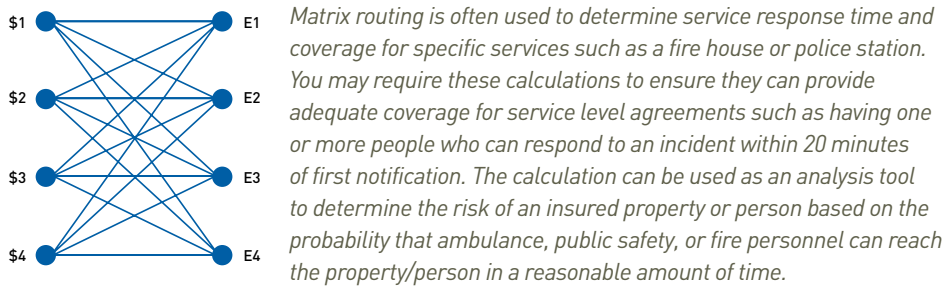


*Example of Find Nearest.*



*This screen is part of a demo whereby an insurance customer was caught in a hail storm which damaged their automobile.*

| InputKeyValue | Latitude | Longitude | hail.BufferRelation | hail.DAMAGE | hail.YEAR | hail.MONTH | hail.DATE_ | hail.HAIL_SIZE_ | hail.Po |
|---|---|---|---|---|---|---|---|---|---|
| 2791 | 33067095 | -116859548 | B | | 1992 | 8 | 13 | 0.75 | 3 |
| 2791 | 33067095 | -116859548 | B | | 1992 | 8 | 13 | 0.75 | 3 |
| 2791 | 33067095 | -116859548 | B | | 1980 | 7 | 27 | 0.75 | 3 |
| 6474 | 37506234 | -120865196 | B | $50,000 to $500,000 | 1994 | 5 | 18 | 1.00 | 1 |
| 12563 | 36781986 | -119741135 | B | | 1995 | 6 | 15 | 0.75 | 7 |
| 12563 | 36781986 | -119741135 | B | | 1991 | 3 | 20 | 0.75 | 7 |
| 12563 | 36781986 | -119741135 | B | | 1980 | 2 | 19 | 0.75 | 7 |
| 12563 | 36781986 | -119741135 | B | | 1957 | 5 | 13 | 1.75 | 7 |
| 12563 | 36781986 | -119741135 | B | $50,000 to $500,000 | 1994 | 3 | 5 | 1.25 | 7 |
| 12563 | 36781986 | -119741135 | B | | 1995 | 12 | 13 | 0.75 | 7 |
| 12563 | 36781986 | -119741135 | B | $50,000 to $500,000 | 1994 | 3 | 5 | 1.25 | 7 |
| 14924 | 33081356 | -116833239 | B | | 1992 | 8 | 13 | 0.75 | 3 |

- **Find Nearest** – Find Nearest locates the points of interest (POI) that are nearest to a given location. You can use Find Nearest to identify points that are:

  > The closest linear distance from a point

  > The closest travel distance from a point

  > The shortest travel time from a point

- **Get Travel Cost Matrix** – calculates the travel time and distances between an array of start and end locations. You can use Get Travel Cost Matrix to find the shortest or fastest paths between a number of start points and a number of end points, and determine the total time and distance of the individual routes (the rout costs). Get Travel Cost Matrix may also be consumed as a web-based service.



*Matrix routing is often used to determine service response time and coverage for specific services such as a fire house or police station. You may require these calculations to ensure they can provide adequate coverage for service level agreements such as having one or more people who can respond to an incident within 20 minutes of first notification. The calculation can be used as an analysis tool to determine the risk of an insured property or person based on the probability that ambulance, public safety, or fire personnel can reach the property/person in a reasonable amount of time.*

- **Get Travel Boundary** – used with both pedestrian data and driving data, updated to include settings for ambient speed. You can create polygons corresponding to precise isochrone or isodistance calculations. In addition to the information needed for targeting and service eligibility, this application provides additional insights:

  > Return Holes – identify areas within your geography that cannot be reached within the desired time or distance.

  > Identify Islands – conversely, you can identify pockets that fall outside your traditional boundaries that can be reached within a desired time or distance.

- **Get Travel Directions** – you can optionally run a set of latitude/longitude points that represent a route geometry. The route geometry can be used to create a route map and to perform analysis on the route.

- **Find Travel Time** – by transforming addresses into precise latitudes and longitudes, you can automatically calculate the distance between two points in terms of time or distance.

- **Get Bounding Box** – returns data in the form of a bounding box made up of two points.

- **Is Within Boundary** – takes latitude/longitude coordinates, as well as polygon information and determines whether the point represented by the latitude and longitude is in that polygon.

In addition, a new Spatial Calculator has been added that performs a variety of spatial validation, transformation and calculation operations on spatial data, supporting seventeen spatial operations, such as:

- Determining the area of a polygon

- Determining if two geometries intersect

**Gain a true view of your data and customers, and make business decisions based on exact, reliable data:**

- Identify key target markets

- Confirm closest sites for customer activities

- Understand geospatial data and benefit from closest-site-identification capabilities

- Verify locations and transform location insights into valuable business intelligence

- Optimize business operations across the enterprise including marketing, sales, service, ligistics and network management

- Plan for the future

- Measuring the area of a given polygon

- Generating a buffer around a point, line or polygon

- Determine if a point is within a polygon

- Determine if a line is a line

## Wide Range of User-Defined Spatial Data

The Spectrum Location Intelligence Module databases provide a vast selection of key geospatial databases for a wide range of uses and industries. You choose one or as many of these data bases that contain the required information to meet your needs. You just provide the location and your location information will be enriched with database specific results.

Depending on the databases you utilize, you can find for example, if a specific property is in a flood zone, near a mud slide zone, has experienced hail or tornado damage, near a school zone, within a given service area or where the closest airport is located. This is just a sampling of how our data can enrich your data. However, if your organization requires additional or unique spatial data, Spectrum Enterprise Location Intelligence Solution also enables you to import other spatial databases through common formats. You also have the flexibility to process a single location in real time as a web service or run millions of locations behind your firewall in a batch format.

## Added Value

### Benefit from an Integrated Approach

Our customers today can take advantage of the location intelligence capabilities that are now integrated within a single ecosystem to manage data, conduct analysis, and derive insight in a simple and cost effective way. Rely on the Pitney Bowes Spectrum Enterprise Location Intelligence Solution and the Location Intelligence Module for a true view and full use of your data. And by incorporating other Spectrum Enterprise Data Quality Solution modules, your input data can be location addresses or Accessor's Parcel Numbers (APNs). With this level of source data, you can confirm that the address does exist and match against other addresses to insure it only exists once in your data.

The adage "time is money" is even more true today. Companies relying on Pitney Bowes Spectrum Location Intelligence Solution Location Intelligence Module's quick and powerful engine are assured reductions in the time it takes for business processes – transactions, queries, analysis, services – versus previous methods. Not requiring the time and complications of "custom programs" or a GIS analyst to process, our approach to location intelligence allows those with knowledge of their data and business objectives to quickly and effectively produce the desired results. The Spectrum Location Intelligence Module provides the functions and sophisticated analytics to help you optimize business operations – including marketing, sales, service, logistics and network optimization – across the enterprise.

# PRODUCT
# DATA SHEET

- Part of the Pitney Bowes Software Spectrum Spatial technology platform

- Certified OGC compliant

- 64-bit operating system support

- 64-bit runtime support

- Compatible with WMS, WFF, CSW, SOAP, REST as well as simple URL-based interfaces

## Specifications

Supports the Application Programming Interface (API) specifications defined by the Open Geospatial Consortium and has certified on the WMS 1.3, WFS 1.0 and CSW 2.0.2 specifications.

Supports the use of the following tools:

**Databases**
- Oracle 10 and 11
- SQL Server Spatial 2008
- PostGIS 1.5.2

**Web Browsers**
- Microsoft Internet Explorer 8, 9
- Mozilla Firefox 10, 11
- Google Chrome 17, 18
- Safari (Mac OSX)

**Operating Systems (Server side)**
- Windows 2003 and 2008
- SUSE Linux 10 and 11
- Solaris 9 and 10
- RedHat 5 and 6
- HP-UX V11iV3 (Itanium)
- AIX 6.1 and 7.1

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**Pitney Bowes** Software

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