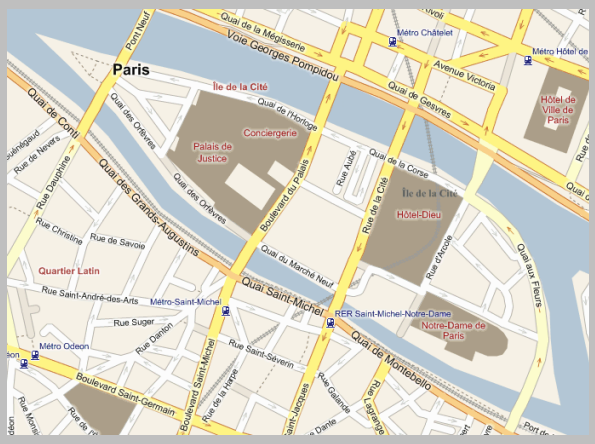
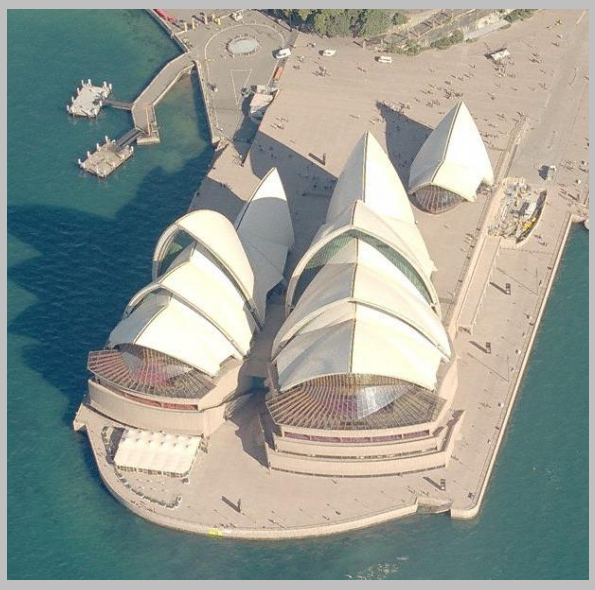
Microsoft® Virtual Earth™

Locate – Integrate – Innovate



Roadmaps for the major roads and ferries are available and routable worldwide. Street-level data is available in 63 countries.

High resolution aerial (bottom) and hybrid (top) imagery is available in an increasing number of countries. 15m satellite images are available worldwide.



Oblique aerial images can be rotated in 90 degree steps. The goal is to cover at least 80% of the populated area with this type of imagery.

Complete and Innovative Platform

The Virtual Earth™ platform is an integrated set of services that combines unique bird's eye, aerial, and 3D imagery with best-of-breed mapping, location and search functionality. With ongoing investments in innovation that are driven by customer feedback, the Virtual Earth™ platform 6.1 continues to offer new tools, advanced feature enhancements, and robust platform capabilities. In this latest release, the new Virtual Earth™ platform is even more flexible, providing a wider range of supported capabilities that allow your business to strengthen customer relationships with innovative solutions and breakthrough experiences. By combining comprehensive support for feature customisation, richer features for end users, and new levels of control and flexibility in the platform, Virtual Earth™ allows you to create unique environments to connect with your customers.

The Virtual Earth™ platform enables businesses to easily and cost-effectively customise unique location experiences for end customers. By providing multiple tools and greater control to change the way location solutions can be developed, businesses can continuously provide and update their online experience to ensure they remain competitive. Add bird's eye or 3D imagery to real estate applications to show prospective clients, enhance your store locator with the dynamic, drag-n-drop maps, or provide your fleet drivers with highly-visual driving directions. The possibilities are endless.

The Virtual Earth™ platform powers a variety of consumer, enterprise and government applications that enable people to learn about, discover and explore a specific location. Virtual Earth™ powers Live Search Maps, Microsoft's online local search and mapping web site. You can use this same power to create a unique application to showcase your business.

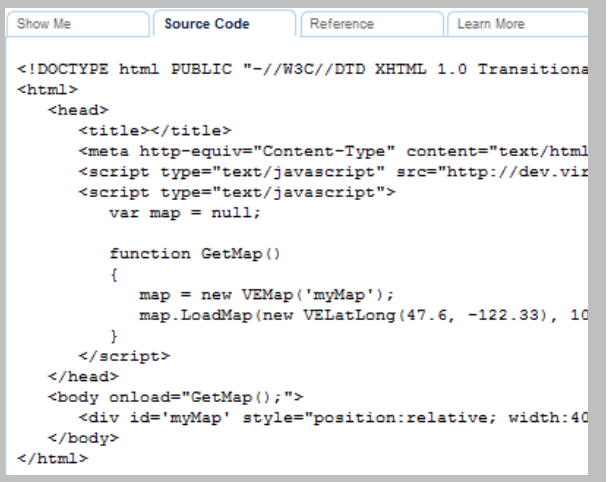
Virtual Earth™ was built with our global customer's in mind. To that end, Virtual Earth™ incorporates major road-and ferry-networks to enable worldwide routing. Within 63 countries road-networks are available down to the street-level and geocoding is available across 25 countries. Moreover, Virtual Earth™ offers global satellite coverage at 15m resolution. Aerial and hybrid

System Requirements:

2D-Mode
- *Internet Explorer 6*
- *Internet Explorer 7*
- *Firefox 1.5*
- *Firefox 2.0*
- *Safari 2*
- *Safari 3*

3D-Mode
- *Microsoft Windows XP Service Pack 2, Microsoft Windows Server 2003, or Windows Vista*
- *Microsoft .NET Framework 2.0*
- *Microsoft Internet Explorer 6, Windows Internet Explorer 7 or Mozilla Firefox 2.0*
- *250 MB or more of hard disk space*
- *A 1.0 GHz processor (2.8 GHz or faster recommended)*
- *256 MB of system memory (1 GB recommended)*
- *32 MB video card (256 MB recommended) that supports Microsoft DirectX 9, with 3D hardware acceleration enabled*
- *A high speed or broadband Internet connection*

In April 2008 we launched VE3D version 2 which provides higher density of buildings, better textures and even vegetation.



The Interactive Software Development Kit makes getting started as easy as never before.

imagery is available in an increasing number of countries with resolutions ranging from 1m and 15cm.

Develop Your Own Applications

Getting started with the development of location rich applications has never been easier than with Virtual Earth™. The "Interactive SDK" enables you to explore implementations of frequently used features. You can explore a "real" implementation in Virtual Earth™, display the complete source code for this particular website or show the reference for this feature. With just one mouse-click you can copy the complete source-code and with a second paste it into an empty HTML-document. Of course there is also a traditional reference SDK available. You do not need to sign-up for a developer account; you can just visit the SDK and start with your first application right away.

Layer-Support and Data-Sharing

In addition to standard-features like geocoding and routing, Virtual Earth™ has full support for layers that enables you to easily share and integrate various geographic data sources. With just a few mouse-clicks you can create "collections" in Live Search Maps and share them with your colleagues and friends. Enterprises across various vertical markets leverage Virtual Earth™ layers to create, share and integrate GeoRSS-feeds as well as KML or GPX-files.

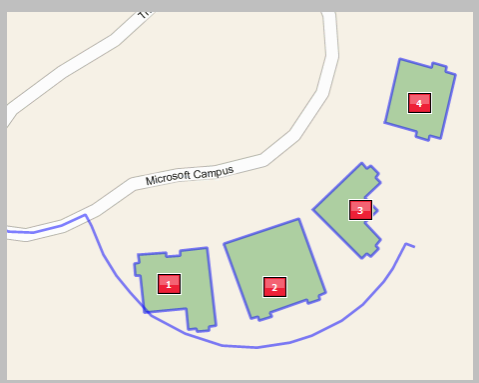
Raster-Data Overlays

In addition to overlaying vector-data on top of Virtual Earth™ you can also overlay your own imagery, floor-plans or CAD-drawings. This is easily achieved with the MapCruncher which was developed by Microsoft Research and is available for free download. MapCruncher allows you to geo-reference raster data as well as PDF-documents and to cut them into pyramid levels and tile layers. When you use your own tile data sources you can exceed Virtual Earth's™ standard zoom-levels and go down to an incredible resolution of 0.03 mm / pixel.

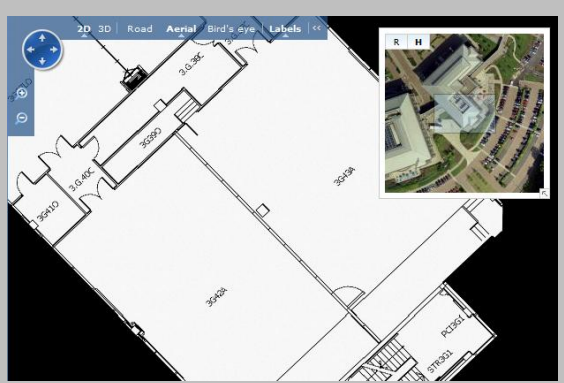
With little additional development or third party tools you can use this approach to integrate OGC-compliant Web Mapping Services or other spatial-data-formats like ESRI-Shape-files.

Custom 3D-Models

Available for free download is Virtual Earth 3dvia which allows you to create your own 3D-models and upload them into Virtual Earth "collections".



Share your location information through Live Search Maps Collections, GeoRSS-feeds, GPX- or KML-files



Overlay your own imagery or integrate OGC-compliant Web Mapping Services.

Create your own 3D-models.

Integration in Business Critical Applications

The Virtual Earth™ platform is designed to enable a broad range of consumer, enterprise and government applications. Today, developers are integrating Virtual Earth™ functionality into applications such as website store locators, information portals, travel portals, mobile location services, call center applications, and fleet / asset tracking solutions.

Geographical Analysis of Your Data

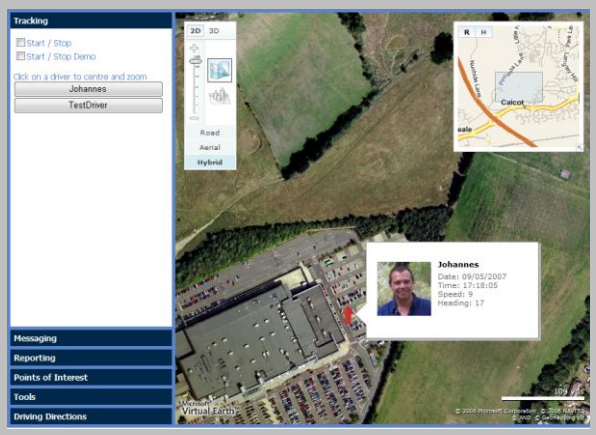
Location aware business intelligence is easily achieved through integration with Microsoft® SQL Server™ and Microsoft® Office SharePoint Server™. For example you can colour-code the location of your infrastructures based on certain key performance indicators. Selecting one of these locations on the map can bring up further alphanumerical analysis and graphical information.

Adding additional information such as demographic data allows you to easily visualize and analyse information in a geographic context. For example this is helpful in understanding target regions for your next marketing campaign, or the best location to open a new store.

You can also integrate Virtual Earth™ in your Customer Relationship Management system such as Microsoft® Dynamics CRM™. This integration can be used to help your sales staff plan their customer visits or perform more sophisticated tasks such as tracking and finding the nearest service engineer in the event of an emergency.

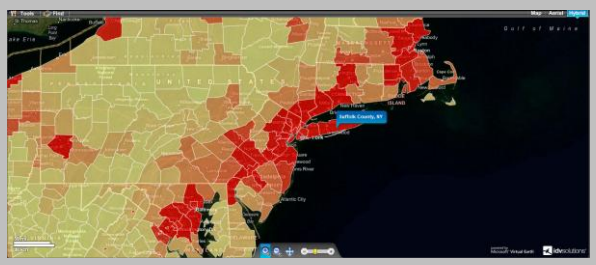
Microsoft® SQL Server™ 2008 will take it to the Next Level

The next generation of SQL Server will come with a spatial-engine that allows you to manage and process your own geospatial data. The integration of SQL Server 2008 in the backend and Virtual Earth™ in the presentation layer will allow even more sophisticated location aware applications like flood-risk analysis or even spatial-mining to simulate future events in a geographic context.



Together with our partners we provide deeply integrated solutions for tracking...

... business intelligence ...



... demographic analysis ...

... or Customer Relationship Management.

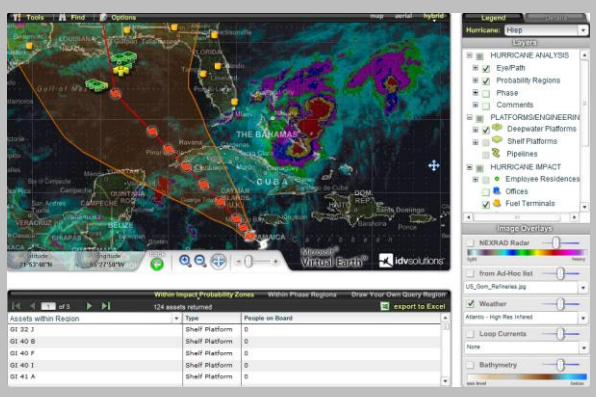
Microsoft® SQL Server Code Name "Katmai"

The next version of the Microsoft® SQL Server™ will be spatial enabled and allow even more complex geospatial integration and analysis applications.

"Katmai" will support spatial data types, spatial indexes and more than 70 spatial functions.

Some "Katmai"-highlights are:

- *OGC-compliant implementation of WKT, WKB and GML*
- *Supports points, polylines, polygons, polygons with holes, multipoints, multilines, multipolygons and multigeometries*
- *Import/export from/to major spatial data formats through partner solutions*
- *Spatial Functions like*
  - *Convex Hulls*
  - *Minimum bounding box*
  - *Intersections*
  - *Reduce number of points in a geometry*
  - *Calculate areas*
  - *Calculate centroids*
  - *Spatial Relationships*
  - *Create buffers*



An impressive example is BP's Hurricane Management System, developed by our partner IDV Solutions.

More Exciting Things to Come

We are constantly adding and updating data and features. New imagery is currently being added every month around the world. Streetside-imagery will be one of the new imagery-types which we plan to make available in Virtual Earth™ in the future. It is currently available as a public technology preview.

Live Search Maps is a great showcase of what's available in Virtual Earth™. You can also download the free plug-in for Microsoft® Outlook™ or the free Live Search Maps for Mobile.

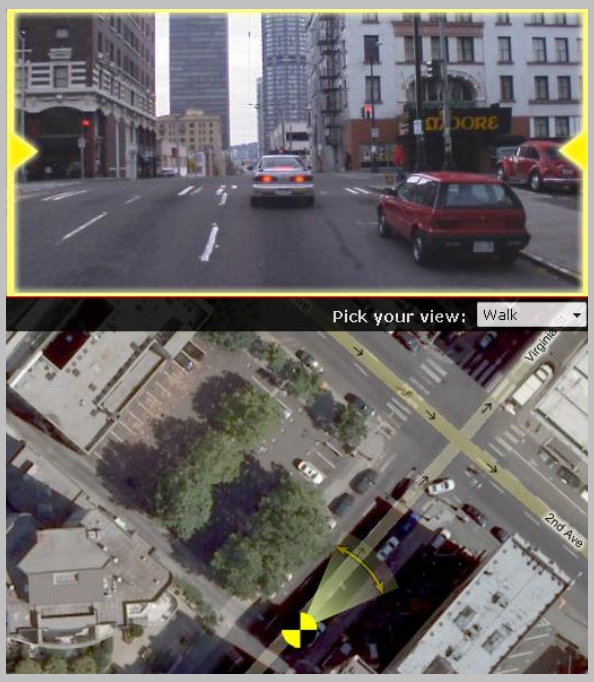
Offline Solutions – Virtual Earth™ Appliance

The Virtual Earth™ platform is an integrated set of powerful online mapping and search services that delivers imagery, 2D & 3D geospatial data, and analysis through a web browser.

The same browser-based capabilities are now available behind a customer's firewall, on private or classified networks, and on portable platforms.

The Virtual Earth™ Appliance is designed to bring all of the rich data and functionality of the Virtual Earth™ internet service to the offline customer.

Custom data integration with the Appliance tracks with that of Virtual Earth™ on the internet. With the same API and tiling structure as Virtual Earth™, customers can integrate their own data or take advantage of the capabilities of Microsoft's network of partner companies. The Virtual Earth™ Appliance also makes possible additional custom capabilities, including the integration of custom content.



One of the future developments will contain the so called "Streetside"-images

The Virtual Earth™ Appliance: A Scalable Platform- from Portable Laptops to Rack-mounted Servers.

Contact a Sales Representative

mapemea@microsoft.com

Further Information:

- Live Search Maps	*http://maps.live.com*
- Interactive SDK	*http://dev.live.com/virtualearth/sdk*
- Reference SDK (online)	*http://msdn2.microsoft.com/en-us/library/bb429619.aspx*
- Intellisense for JavaScript	*http://www.codeplex.com/VEJS*
- MSDN (overview)	*http://msdn.microsoft.com/virtualearth*
- MSDN (technical articles)	*http://msdn2.microsoft.com/en-us/library/bb545001.aspx*
- Via Windows Live (Community Site)	*http://www.viawindowslive.com/*
- MapCruncher	*http://go.microsoft.com/fwlink/?LinkId=99819*
- Virtual Earth Appliance	*http://www.vexcel.com/viscollaborate/veappliance*

- Streetside Technology Preview	*http://preview.local.live.com*
- Windows Live Maps for Outlook	*http://outlook.maps.live.com*
- Windows Live Maps for Mobile	*http://wls.live.com*

Related Technologies:

- MapPoint	*http://www.microsoft.com/mappoint*
- Photosynth	*http://labs.live.com/photosynth*