

# IMPS

IDAN MISSION

PLANNING SYSTEM



IDAN COMPUTERS LTD.





ע'ד / מחשבים הנדסה (1979) בע"מ

IDAN COMPUTERS ENGINEERING (1979) LTD



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## Executive summary

### Introduction

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*Idan is a well-established software company that provides image analysis, CAD, and 3-D modeling tools. Industry applications include transportation, real estate development, engineering, law enforcement, homeland security, and more. The Idan customer base consists of government authorities at the national and local level, military and law enforcement agencies, and private industry. Founded in 1970, Idan is headquartered in Azor, Israel.*

### Management Team

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*Idan is led by a respected management team with extensive experience in software development, civil engineering and the geospatial industry. Our experienced team guarantees that Idan will continue to deliver innovative products that respond to the current and future needs of our clients.*



## Products

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*Idan provides its products and services worldwide to leading industry players. We use our expertise and knowledge to deliver advanced, innovative solutions. We design our products to have the highest value while being implemented with the smallest effort and the fastest time to market.*

### IMPS™

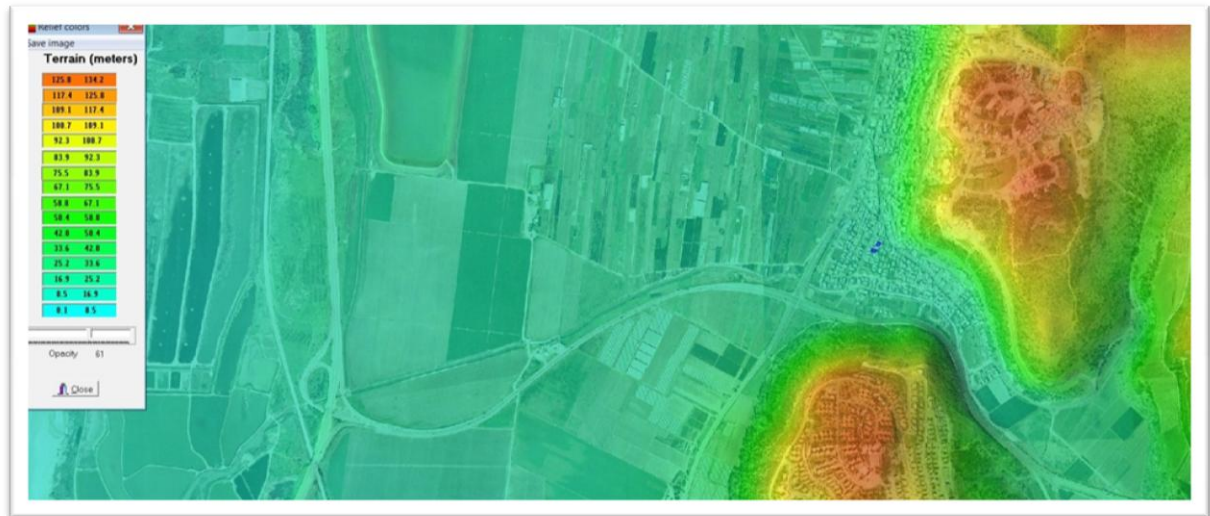
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*Idan's Mission Planning System is a combat-proven mission planning platform for the military, homeland security and law-enforcement agencies. Complete with its unique image analysis capabilities and a suite of mission planning tools, IMPS™ transforms visual and geographical data into accurate, meaningful, and actionable visual intelligence.*

*Developed to satisfy the unique needs of military, homeland-security and law enforcement agencies, IMPS™ enables the creation of operational plans in a simple, quick and accurate fashion.*

*By integrating visual, topographic and above-the-ground data, users are able to create realistic 2D and 3D models of targeted areas. Then, utilizing unique image analysis tools (i.e. Idan's Oblivision™ technology) and specifically tailored mission planning tools, operational plans can be easily devised.*







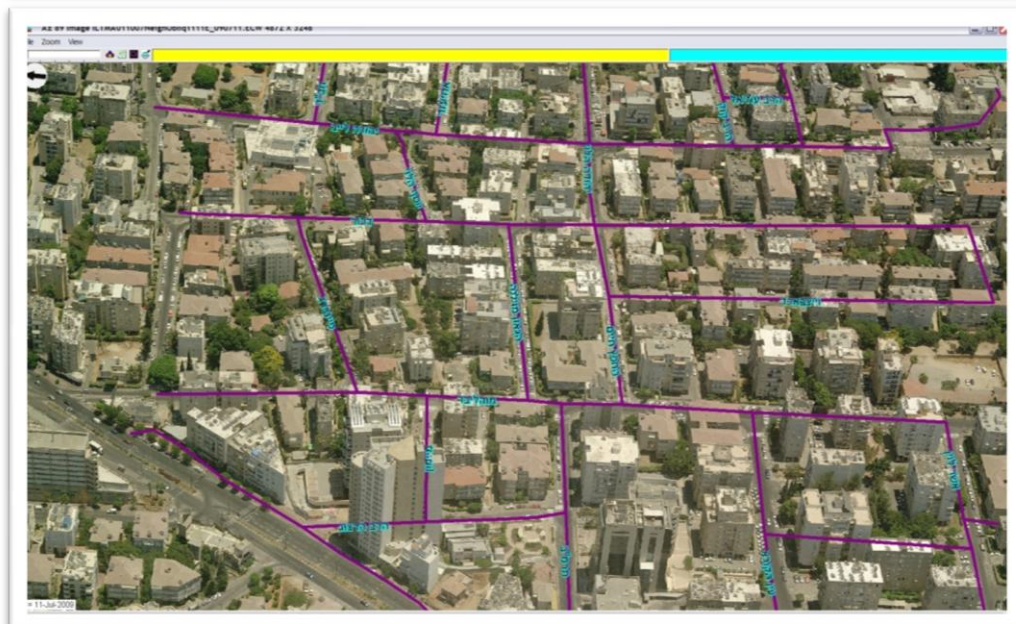
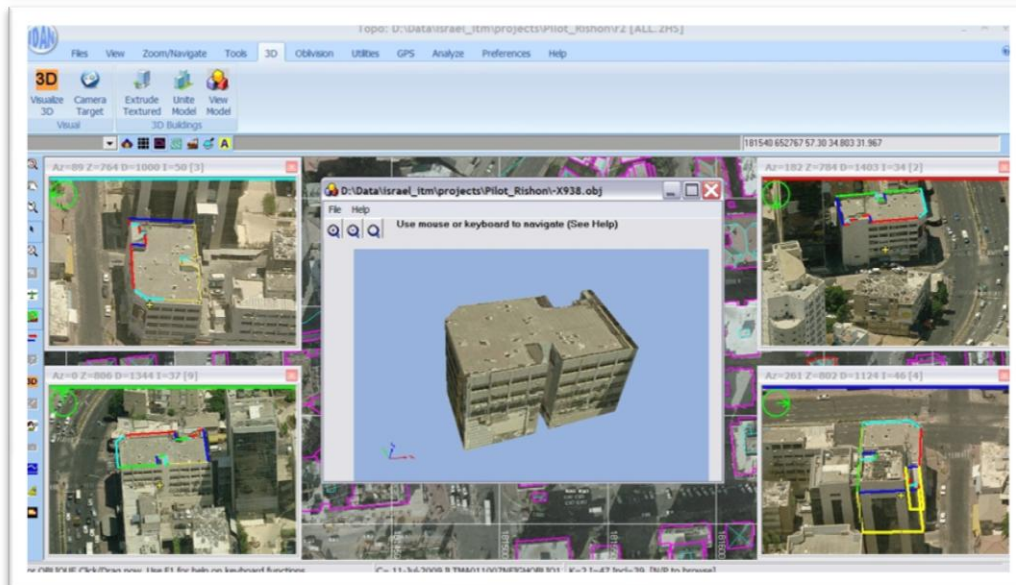
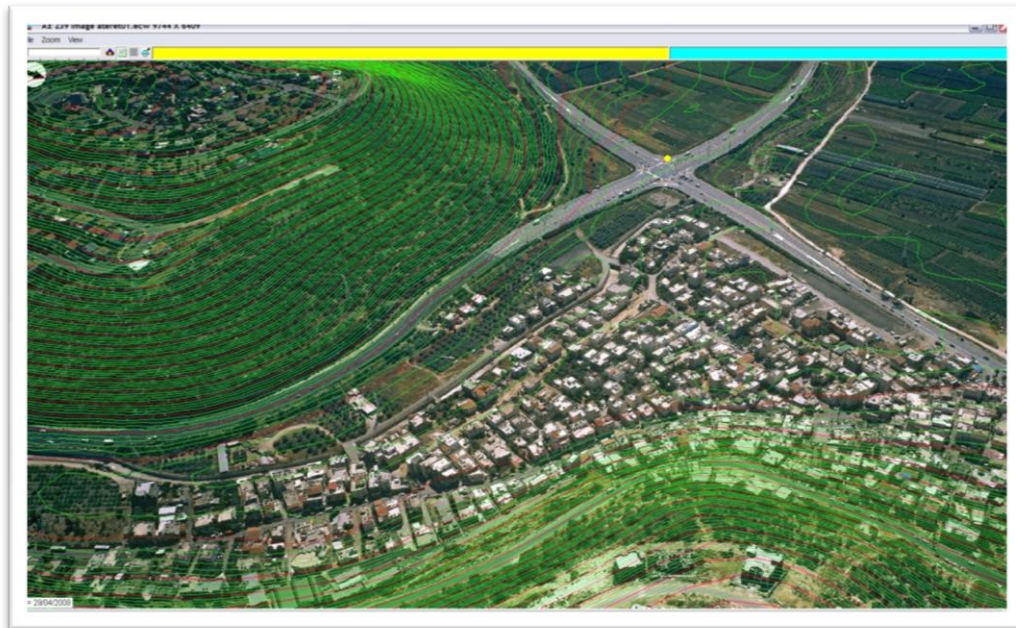
## Oblivision™

*Oblivision™ - a play on the words "Oblique" and "Vision" - is an advanced solution for handling and analyzing visual information. Oblivision™ combines the benefits of orthophotos with the rich detail of oblique images, providing 360° view of targeted areas. Combining two widely available visual data sources—orthophotos and oblique images—with image-analysis tools. Oblique images are geocoded and then overlaid on orthophotos to produce a single visual data layer.*

*This unified approach to data analysis maximizes data throughput and facilitates the process of turning visual information into valuable intelligence. Using the Oblivision™ image-analysis tools, you can extract actionable visual intelligence, such as accurate measurements of structures and other objects.*



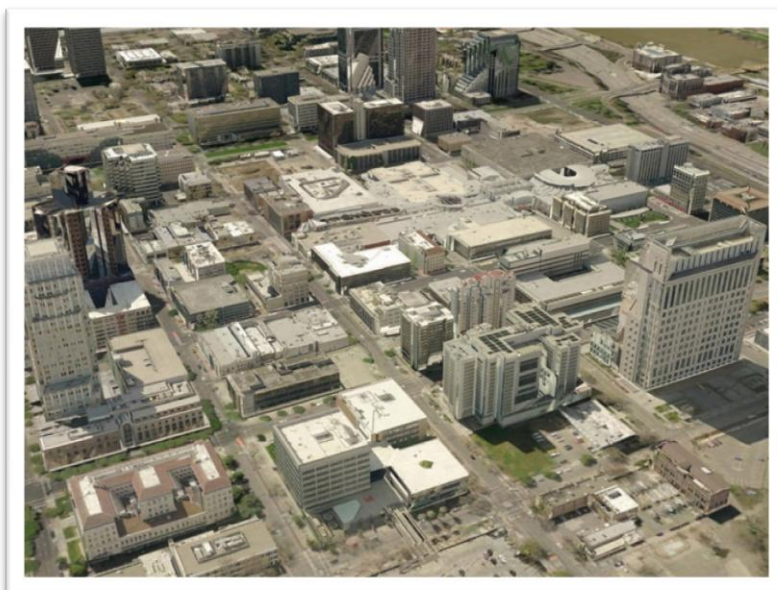






### 3D Visualization

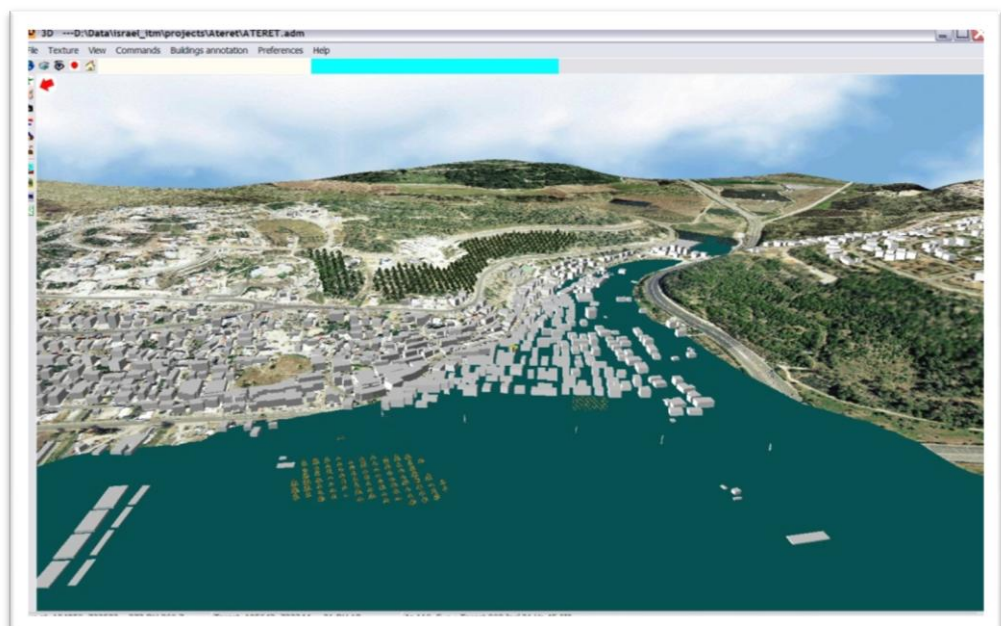
*Idan's 3D visualization software enabling terrain and above-terrain (i.e. structures, vegetation, vehicles etc.) modeling, raster draping (e.g. orthophotos), fly through & movie caption, panoramic view and more. The 3D Simulator is a standard component of Idan's other products – Oblivision, IMPS and ICE - and can be integrated into 3rd party software.*





## ICE™

*Idan's Civil Engineering platform integrates software tools such as digital terrain modeling and mapping, 3D visualization, orthophoto handling etc. ICE is a software tool designed to enable accurate, quick and cost-effective execution of civil engineering tasks such as road design, site development, sewage & drainage site design and more.*





### Key Features

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- **Terrain analysis** –creates relief, slope and contour-line maps and view local and maximal high-points for basic topography analysis. Analyze terrain cross-section of digitized tracks (elevation, inclination and distances) to assess navigability/traversability.
- **Visibility analysis** - provides visibility analysis tools such as line-of-sight analysis and Sun/Moon shading analysis, all of which take into account ground topography and above-the-ground objects.
- **3D modeling and visualization** - 3D modeling tools enable simple and quick transformation of 2D models into realistic 3D models. Structures, vehicles, vegetation, contour lines, digitized tracks – all and much more can be presented in the 3D model.
- **Oblivision™** - Idan's patent-pending image-analysis tool, combines orthophotos with oblique images to produce a 360° view of the targeted area. Oblivision™ unveils visual data otherwise inaccessible and greatly facilitates orientation. Oblivision™ is integrated into both 2D and 3D models.
- **Tactical VISINT aids** – navigate the 3D model and create motion simulations (movie caption is possible). Place yourself anywhere in the 3D model and create observation point simulations. Print panoramic snapshots of the 3D model or create scaled orthophotos with digitized tracks (and any other info) on top. Create anaglyph view of the 3D model.





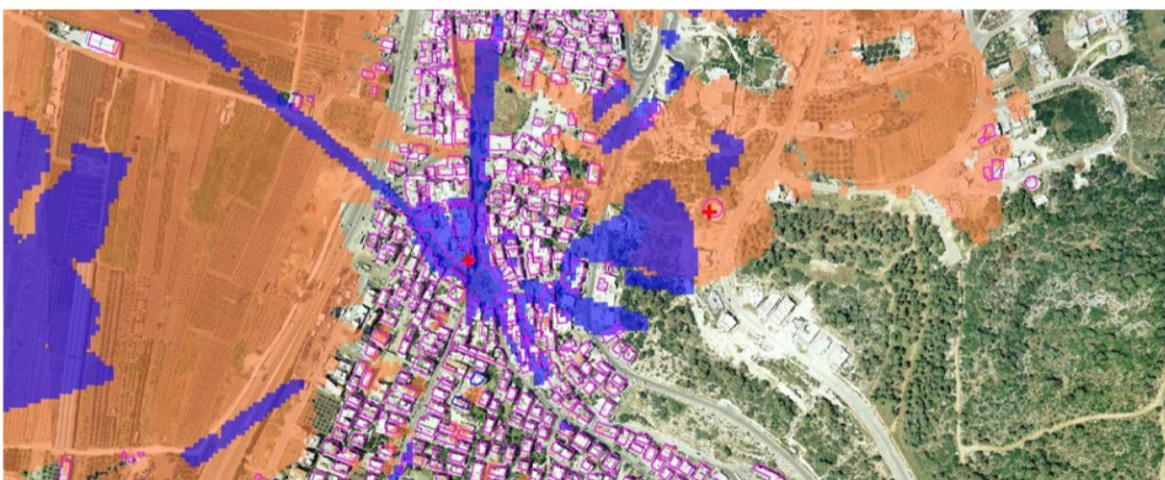
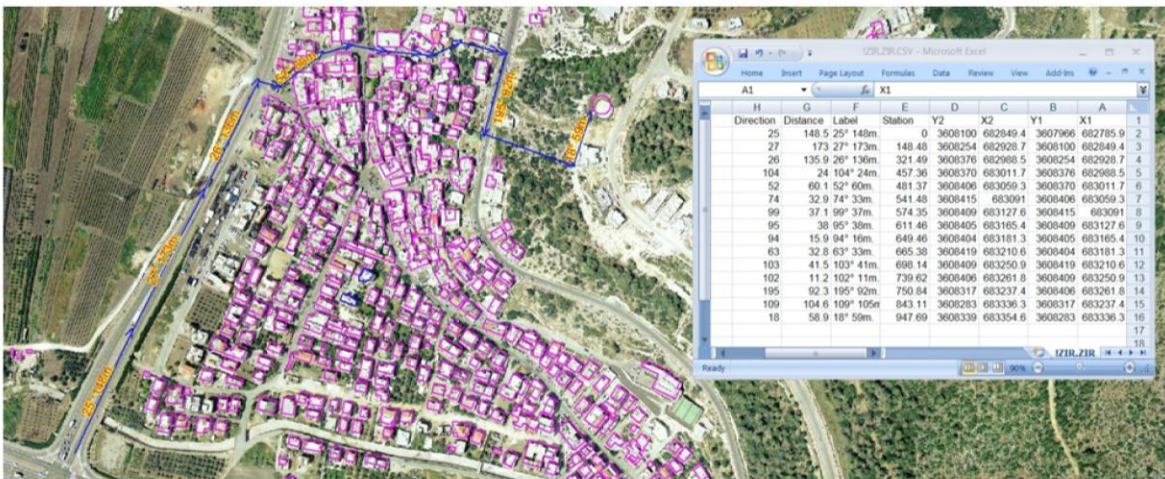
- **Image archives** - IMPS™ handles orthophoto archives and enables automatic retrieval of relevant data. External databases containing any kind of information (documents, images, movies, building schematics etc.) can be created and cross-referenced to actual targets in the 2D and 3D model.
- **GPS integration** – a GPS and IMPS™ ‘bundle’ allows users to track their location on IMPS™ and instantly access “beyond-visibility” intelligence. Another useful feature is the ability to download digitized tracks from IMPS™ to GPS devices.
- **Extruding building textures** – A very fast and completely automatic procedure to extract building facades from oblique aerial images, and creating a complete 3D model.

#### Idan's customer

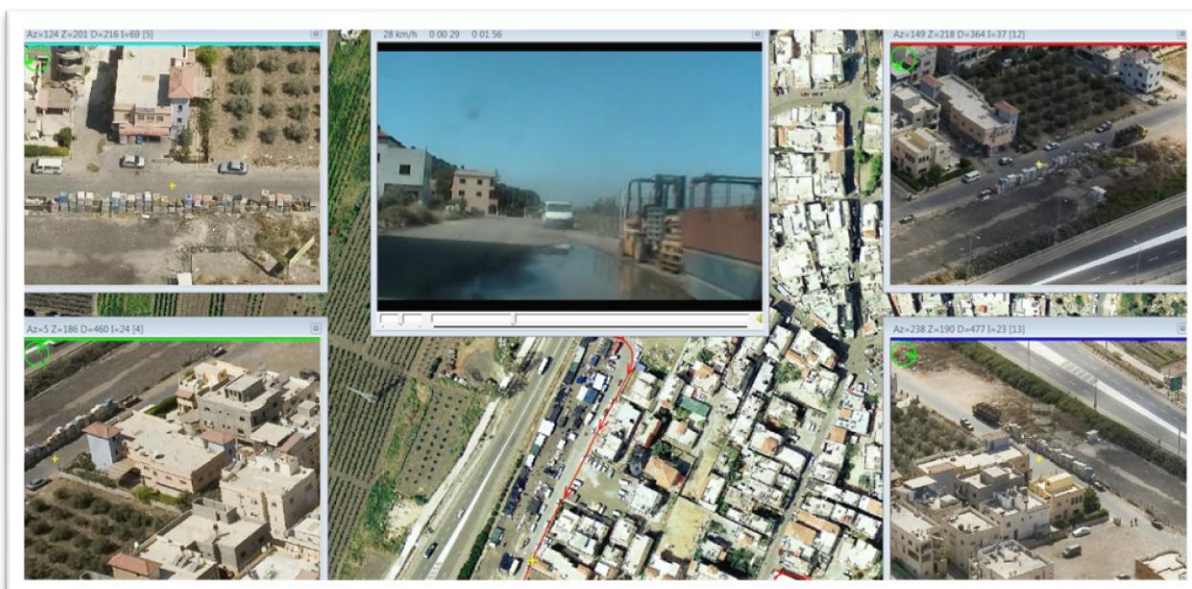
Idan customer base consists of government authorities at the national and local level, military and law enforcement agencies, and private industry.



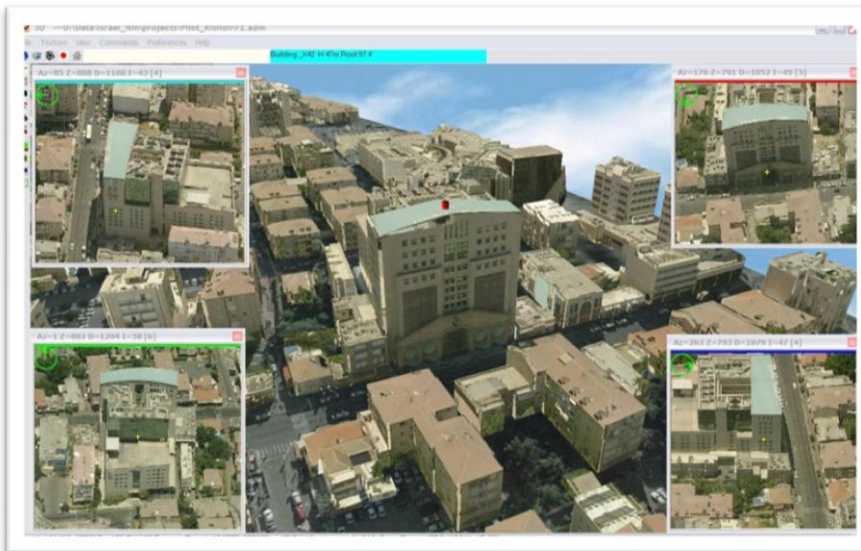
## Samples of IDAN products













## Raw materials for IMPS product

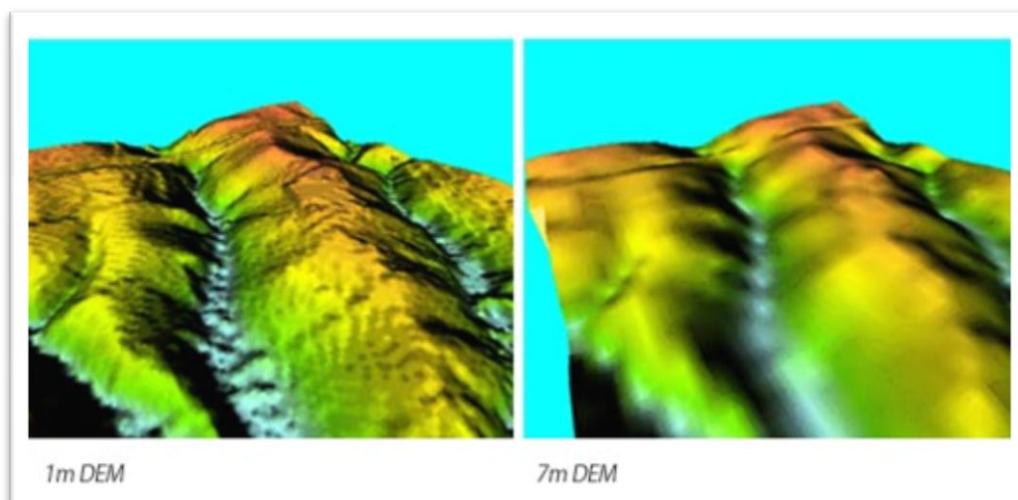
The following are specifications of raw materials used by our company for the IMPS product:

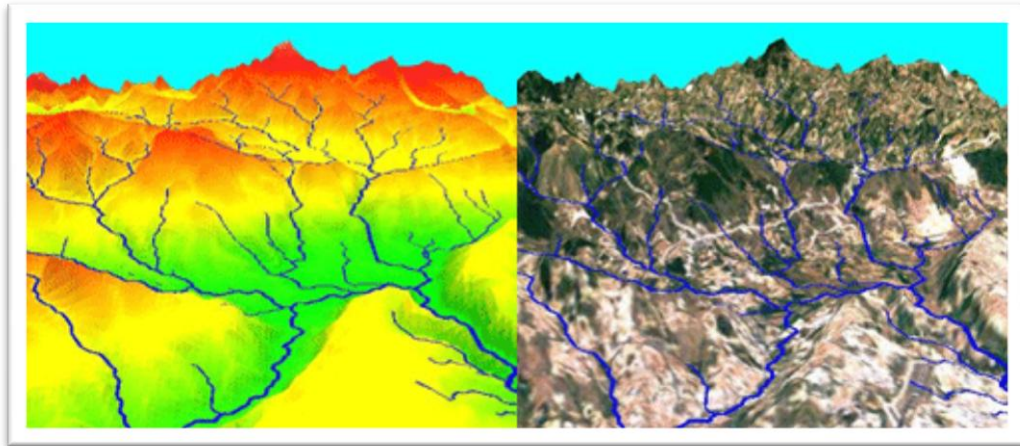
### DTM- Digital Terrain Model

Digital elevation models are digital models or 3-D representations of surface terrain — most often used for description of planets (including Earth), moons, or asteroids — which are prepared using terrain elevation data. Digital terrain models represent bare ground surfaces without any objects such as plants and buildings.

DTMs may be represented as a raster (a grid of squares, also known as a height-map when representing elevations) or as a triangular irregular network (TIN). TIN type DTM data-sets are also referred to as a primary (measured) DTMs, while Raster type DTMs are referred to as a secondary (computed) DTMs. DTMs are typically prepared using remote sensory techniques, or by land surveying, are often used in geographic information systems, and are the most common basis for digitally-produced relief maps. DTMs may also be acquired by way of other techniques such as photogrammetric, LiDAR, IfSAR, land surveying, etc. They are often required for flood or drainage modeling, land-use studies, geological applications, and much more.

See also: [http://en.wikipedia.org/wiki/Digital\\_terrain\\_model](http://en.wikipedia.org/wiki/Digital_terrain_model)





*Gridded Elevation Formats Supported by IMPS: DEM, TIF, DT2, GRD, ADF.*

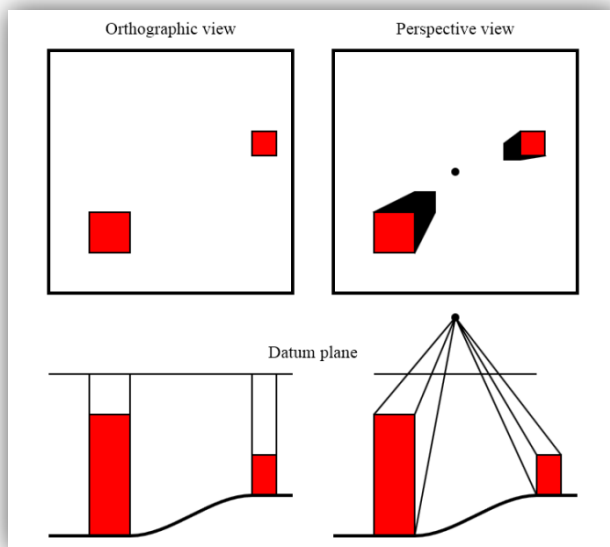
*ASCII free Formats Supported by IMPS: RGP, XYZ, REG and DIS formats.*



## Orthogonal Orthophotos

**Orthophotos** are aerial photographs that are geometrically corrected ("orthorectified") in such a way that the scale is uniform, and as a result, have the similar lack of distortion to that of maps. Unlike uncorrected aerial photographs, orthophotographs may be used for measurement of true distances. This is because they produce an accurate representation of the Earth's surface and include adjustments for topographic relief, lens distortion, and camera tilt.

Orthophotographs are commonly used in the creation of a Geographic Information Systems (GIS). Some software is able to display orthophotos and allows operators to digitize or place vectors, text annotations or geographic symbols (such as hospitals, schools, and fire stations). Some software is capable of processing orthophotos automatically and produces the vectors on its own.



See also: <http://en.wikipedia.org/wiki/Orthophoto>



*Raster (Imagery, Scanned Maps) Formats Supported by IMPS: ECW, BMP, TIF, SID and JP2 formats.*



### *Buildings Footprint Shape File (Optional)*

*Building footprint layers are an integral part of the manner by which cities are represented in Geographic Information System and provide an overlay of buildings layers that enable viewing of structures that simulate the form and size of the buildings in the project area.*

*The data files used for such layers are obtained from local government and state organizations and contain information detailing the delineation of buildings in a given area, their elevation from the ground/sea level, and their name code. The files are typically supplied in SHP (shapefile) format, but may also be supplied in DXF format. You may also use lines (LIN) file to create buildings.*



*Once a buildings layer is added onto a project, the following may be performed:*

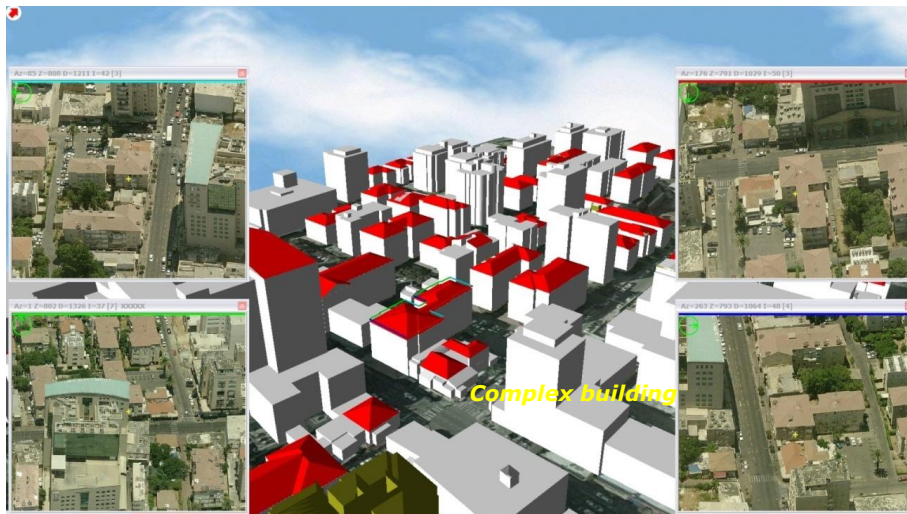
- *Viewing of building name lists.*
- *Addition and removal of buildings from a layer.*
- *Viewing of building rooftops in colors that represent their heights relative to each other.*
- *Viewing of building information.*
- *Marking of selected buildings with a crosshairs and center them in the Image window.*
- *Zooming into view building outline.*
- *Editing of building height and names, or association of specific files with selected buildings.*

Building footprint layers may consist of both simple and complex structures:

Simple structures consist of flat roofs with fixed heights:



Complex structures consist of sloping roofs or multiple roof levels of varying heights:



Building footprint vectors formats that are supported by IMPS: SHP, DXF and LIN formats.



### Oblique Images (Optional)

Aerial photography typically involves shooting of terrain photographs from elevated locations. The term usually refers to images that are shot from locations in which the camera is not supported by a ground-based structure. Cameras may be either hand held or mounted, and photographs may be taken by a photographer, triggered remotely or triggered automatically. Typical shooting platforms include fixed-wing air-crafts, helicopters, balloons, blimps and dirigibles, rockets, kites, poles, parachutes, vehicle mounted poles, etc.

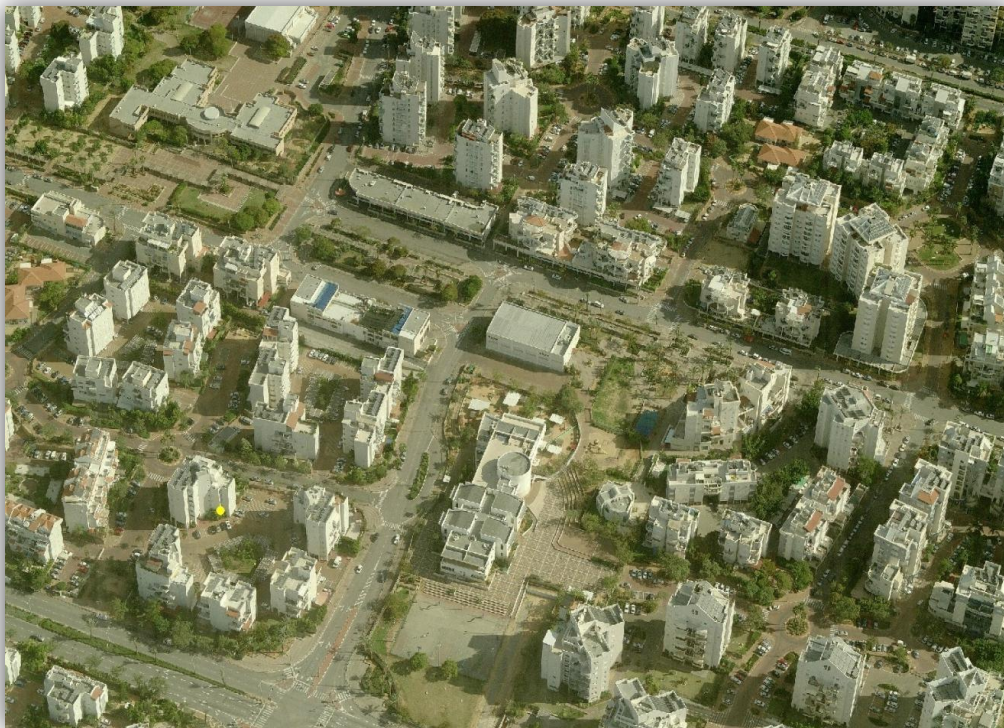
Photographs that are taken at an angle are called oblique photographs.

IMPS software allows us to take various measurements directly from the image, including heights, distances, areas, elevations and bearings, and allows dynamic creation of contour lines by the user. Images may also be overlain with shape-files and enable export of GIS information.

Oblique photographs show buildings, infrastructures, and land from all sides. With a 360° view of the targeted area, Oblivision™ facilitates the transformation of visual data into accurate, meaningful, and actionable visual intelligence.



See also: [http://en.wikipedia.org/wiki/Aerial\\_photography#Oblique\\_photographs](http://en.wikipedia.org/wiki/Aerial_photography#Oblique_photographs)



*Oblique images Formats Supported by IMPS: ECW, JPG2 and JPG formats.*



## IMPS Product System Requirements

*IMPS software is compatible with Windows XP (32 and 64-bit versions) and Windows 7 (32 and 64-bit versions).*

*Minimum system requirements are:*

- ✓ *Mobile or desktop, minimum 2 GB of RAM*
- ✓ *600 MB of hard drive space for installation purposes*
- ✓ *Graphic card: NVidia Geforce or Quadro*
- ✓ *CPU Pentium*
- ✓ *Minimum Hard Disk: 80GB*

*Free Space requirements for data is typically higher depending on dataset size*



## Success stories

### Operation Cast Lead

The Gaza War, also known as Operation "Oferet Yetsuka" ("Cast Lead"), was a three-week armed conflict that took place in the Gaza Strip and southern Israel during the winter of 2008–2009. In escalation of an ongoing conflict, Israel opened the attack with a surprise air strike against the Gaza Strip on December 27, 2008. Israel's stated aim was to stop rocket fire into Israel and prevent illegal import of arms into the Gaza strip. In the opening assault, Israeli forces attacked Hamas police stations and other government buildings, with direct strikes inside the densely populated cities of Gaza, Khan Younis and Rafah.

In its assault, the IDF used IMPS software for front line activities, and by doing so, was able to spare the lives of many IDF soldiers during this complicated combat. Today, the IDF has chosen IMPS as their exclusive software of choice.





### **EITAN – The IDF Missing Persons Identification Unit**

*The IDF Missing Persons Identification unit is a high classification unit that deals with the identification of fallen soldiers whose resting place is unknown.*

*IMPS software is used for terrain analysis and for the creation of environmental conditions that enable resolution of complex and difficult issues.*

*Six months ago, a missing soldier was located by combing IMPS software technology with cellular companies in order reduce the search area from 20 sq km to 1 km.*



### ***Rishon Lezion Municipality***

*Rishon LeZion, Israel's fourth largest city, is located in the country's central coastal plain, roughly 12 kilometers south of Tel Aviv, and is considered a part of the Gush Dan metropolitan area. In late 2009, the city had a population of 228,200.*

*West Rishon LeZion is a conglomeration of the new neighborhoods which was constructed during the 1980s and 90s. The west also has higher land values because of its relative proximity to the Mediterranean Sea. It includes the entire city west of Tzahal Road.*

*In efforts to assist city employees in the ongoing management of the city, the mayor decided to have a three dimensional project of the city prepared.*

*The primary objectives of the software and the 3-D modeling it produced was to detect structures that underwent changes that violated municipal building permits, and to assist in town planning, location of public buildings, analysis of public transport routes, and planning of municipal projects.*









## ABOUT IDAN

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Industry applications include transportation, real estate development, engineering, law enforcement, homeland security and more.

The Idan customer base consists of government authorities at the national and local level, military and law enforcement agencies and private industry.

Founded in 1970, Idan is headquartered in Azor, Israel.

Idan's management team brings extensive experience in civil engineering, the geospatial industry and software development to the company.

## CONTACT US

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