

VIS-All®

Visualise Your Ideas !

Visualise

Create 3D scenes easily

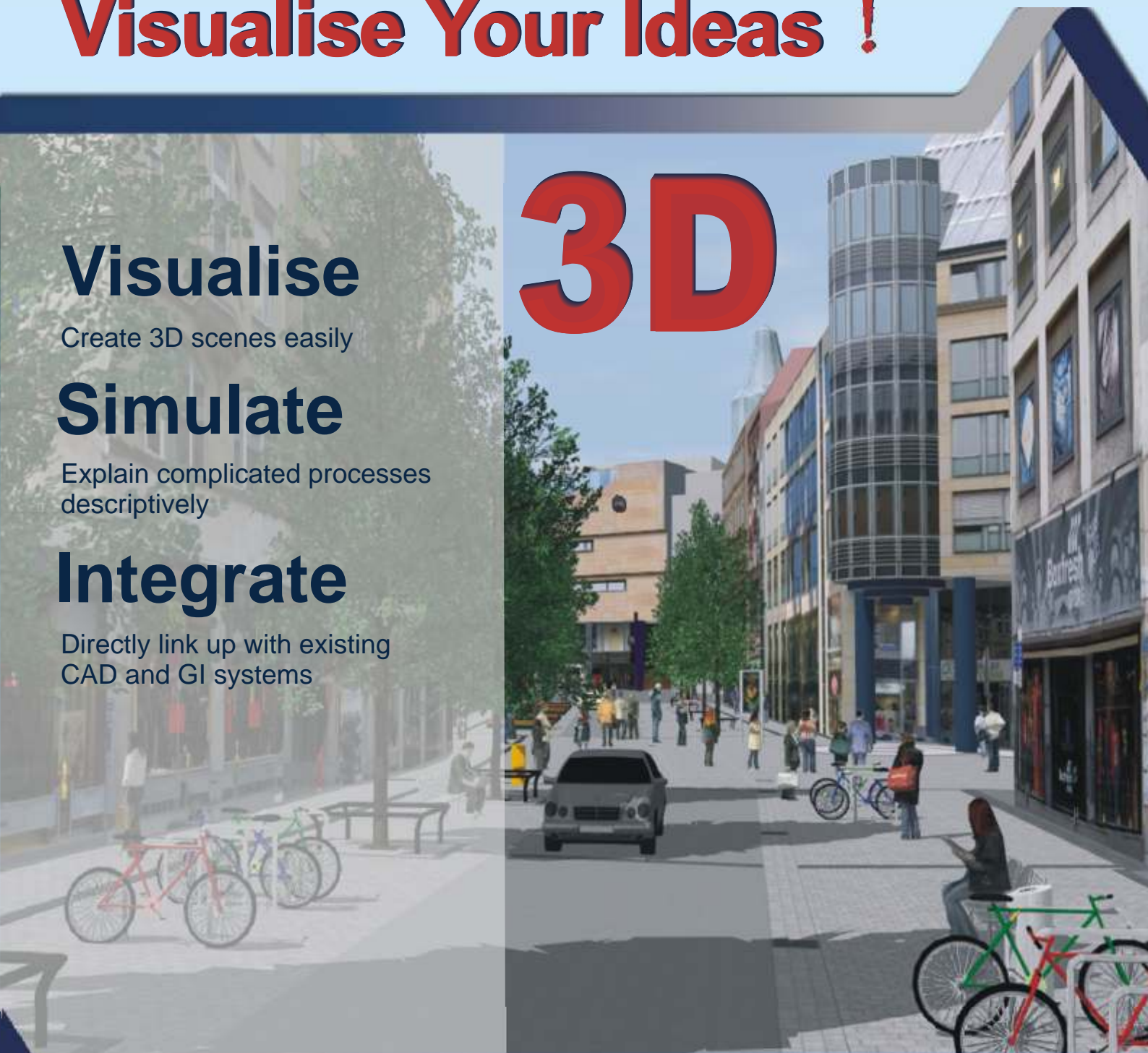
Simulate

Explain complicated processes descriptively

Integrate

Directly link up with existing CAD and GI systems

3D



www.vis-all.de



SOFTWARE
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Interactive 3D with VIS-All®

What is VIS-All®?

VIS-All® is a standalone software. It converts data from CAD and GI systems into a 3D image. The program contains various visualisation, simulation and planning options that allow for a diverse range of applications.

The idea behind VIS-All®:

To produce and apply base data in a familiar work environment and benefit from the additional possibilities of planning, visualisation, animation and technical analysis.

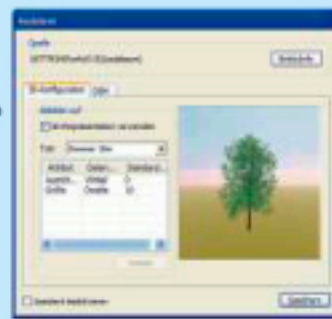
VIS-All® is made to link up with existing CAD and GI systems via a standardised COM interface, which guarantees the fast and easy export of data to and from VIS-All®.

Within VIS-All® you find a comprehensive yet expandable library of 3D symbols that supports the design qualification of planning data for 3D imagery.



CAD/GI-System

COM - interface



Allocation via assistant



VIS-All® scene

Existing Linkups to CAD and GI systems

- ✓ ArcGIS® (ESRI Geoinformatik GmbH)
- ✓ ArcView® (ESRI Geoinformatik GmbH)
- ✓ BaSYS (Barthauer Software GmbH)
- ✓ CAPLAN (Cramer Programmentwicklung GmbH)
- ✓ GEOgra® (HHK Datentechnik GmbH)
- ✓ AutoCAD® (Autodesk)
- ✓ Geomedia® (Intergraph Corporation)
- ✓ INGRADA (SoftPlan GmbH)
- ✓ INGRADA web (SoftPlan GmbH)
- ✓ ITWO® (RIB Software AG)
- ✓ MapInfo (MapInfo GmbH, agis GmbH)
- ✓ STRATIS® (RIB Software AG)

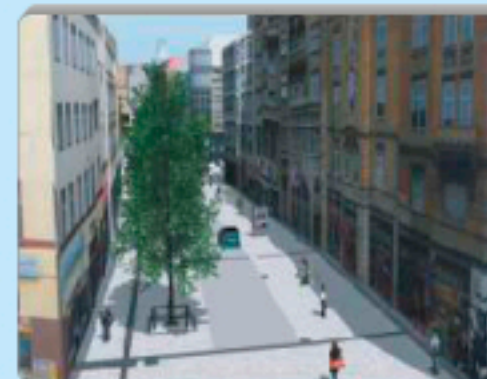
Visualising

Depending on the version you choose there are a multitude of possibilities available to edit the 3D model once the data has been imported.

Buildings and surface areas can be texturised, 3D elements scaled and added. Points of view and groups can be created to enable before and after comparisons.

The scene can be viewed from the perspective of the pedestrian or any other pre-determined point of view.

Visualisation examples



Simulating

Different types of simulation make impressive presentation and assessment of situations possible.

Virtually any conceivable environmental condition can be illustrated with the use of functions like weather options, precise shadow animation depending on locality and date and time.

Even complex animations such as vegetation growth, moving wind turbines and flood simulation can be created by means of plug-in scripts.



To the interactive 3D

- Link up with CAD and GI systems
- Generate 3D models
- Simulation, animation, technical analysis
- Various import and export interfaces (p.18)
- Comprehensive 3D symbol libraries

Example of Application: Town Planning

Why do town planning in 3D?

Say your local community is planning a new or remodel building project and the town council has to vote on the planning application.

Many council members are not always clear what they are voting on when given 2D plans produced by the planning office, as non-experts often find it very difficult to interpret these. How do the new buildings fit into their surroundings? What distinguishes the different variations? Which new visual axes emerge?

These and many more questions are easily and intelligibly answered through 3D visualisations of the plans.



Creating and Maintaining Town Models

Today 3D town models often present the basis to visualise modern planning. Councils can easily create these with the help of VIS-All®.

The necessary base data (3D building models, digital area and terrain models, orthophotos) can usually be obtained from the relevant land registry offices.

VIS-All® helps you create a town model with this data.

Project-based Expansion of Town Models

VIS-All® allows for expanding on particular areas of the town model or developing standalone 3D projects for planning purposes. With the help of special interfaces architects models can be adopted and intelligibly compared to existing variations simply using the programs on/off function.

In order to improve the recognition value to local observers a comprehensive 3D symbol catalogue including street furniture, lighting, vehicles, people, playground equipment, etc. is available to enhance the models.

Variation comparison with the town model

Visualising Construction Sites

Newly approved sites for construction are generally subject to certain planning regulations for future construction. This usually means that the number of floors and the style and shape of roof are strictly regulated.

With VIS-All® development schemes and future construction can be converted using 3D model houses or concrete architect's models to quickly create a realistic 3D scene.

These 3D development models allow for better marketing and can be updated easily to show progress made on the construction site.

Publishing of 3D Models

Depending on the task requirements 3D projects can be published in different ways and thus be made available to a broader public or for internal use only.

3D-PDF, City-GML, Google-Earth, VRML and the free VIS-All® Info-System formats are available to export data.

Complete town models can be published on the internet via streaming technology. Videos produced with VIS-All® can reach a wide audience when published on a website or linked to a relevant video platform.

VIS-All® Advantages

With VIS-All® you can use advantages of a professional 3D program.

- Create 3D town models
- Comprehensive 3D object library
- Visualise projects
- Easily compare variations
- Check visual axes in 3D
- Insert 3D planning in 2D images by photo montage
- 3D measuring functions
- Shadow analyses

VIS-All® allows the planning office to keep complete control of its projects, present them intelligibly to non-experts and thus improve their marketing.

Councils are able to create and develop their own models and small future projects without having to go through the tendering process. 3D models further significantly support the decision-making process.

Planning and visualisation of a specific land use area



3D town model

- 3D town models in all 4 levels of detail
- Large extendable 3D symbol library
- Easily texture buildings with photos and textures
- Illustrate planning scenarios
- Analyse visual axes in 3D
- 3D measuring functions
- Analyse shadows
- Export to 3D-PDF, City-GML, Google-Earth, VRML, VIS-All® Info
- as a basis for 3D Print

Interactive 3D
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Example of Application: Wind Power Plants

The Situation

Many federal German states support ambitious targets to increase the amount of renewable energy produced in the coming years.

An important factor to reach this ambitious result is the significant expansion in wind power.

In many regions new areas are designated for this purpose and wind parks are in the planning stage. Particularly in areas that currently have no wind power plants conflict with the local communities is often inevitable.

3D Images Objectify Debates

The planning of wind power plants is often politically charged, when concerned local citizens are worried about the effects during the implementation process. The biggest fears arise because many people cannot imagine how the planned plant will optically fit into the landscape, or the shadow flicker of the rotors will affect their quality of life.

Generating 3D Landscapes

A digital area model with orthophoto of the area as base data is input along with buildings and other 3D objects relevant to the visual axes create a correct visualisation.

Subsequently the wind power plants can be placed directly per mouse click of the aerial image or importing the planning data. Various basic types of wind power plants are available as 3D symbols from the built-in library. These can be animated and scaled (rotor diameter, wind tower height).

The debates on plans of wind parks are sometimes very emotional and controversial. Transparent planning illustrations using 3D visualisations or correct photo montages created with VIS-All® significantly contribute to objectify the debate.



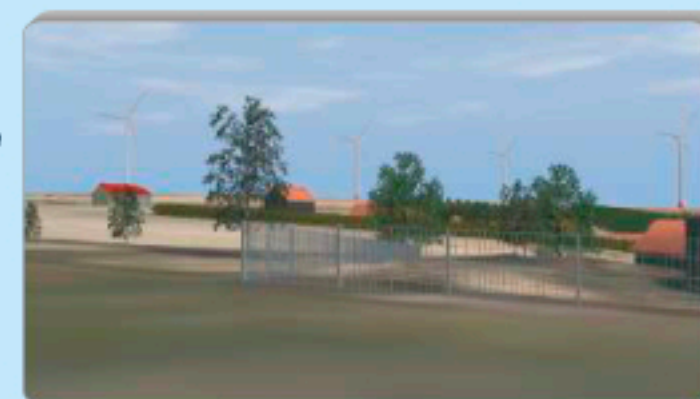
VIS-All® Advantages

Any desired number of visual axes that demonstrate the effect of the wind power plant on the landscape can be stipulated in the 3D model.

A shadow flicker analysis for the area can be incorporated at any time.

The decision-making process is made significantly easier by data export options like Snapshot, inserting photo montages in background images and videos using various tracking shots (flyover, pedestrian perspective).

Projects can of course be presented directly at information events.



*Urban visual axis
on planned wind park*

VIS-All® is the perfect tool for wind park and regional planners, local, county and municipal councils and even local action groups that want to communicate the current planning stages clearly and transparently for all.



*Measuring the length
of the shadow flicker*

Wind power plants

- Visualise projects
- Choose from different arrangements types
- Examine visual axes in 3D
- Generate photo montages
- Compare variations
- 3D measuring functions
- Analyse shadow

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Example of Application: Solar Plants

Why plan solar plants in 3D?

Before developing a solar plant or park engineers are faced with the task of assessing the commercial viability of the project.

Beside the legal and spatial requirements time, intensity and possible impact of shadows are the main factors to consider during this process.

The location and energy efficiency of a solar plant can be assessed much more effectively by simulating shadow fall off from surrounding buildings, trees, etc., As well as incorporating the different seasons, future vegetation growth or even the erection of additional future buildings.

VIS-All® is a fantastic tool to assess these situations. The 3D visualisations considerably aid your presentation and thus help marketing your services better to potential clients.

What data is required?

In order to carry out a precise shadow analysis you require a 3D model of the area with information on the vegetation and buildings surrounding the site.

VIS-All® easily generates 3D models for open space plants yet also allows you to incorporate existing 3D building models in an urban setting.

VIS-All® Advantages

VIS-All® shows you the exact path of the sun and resulting shadows and their impact at any given time irrespective of the locale, be it roofscapes, facades or open space settings. The settings can be adjusted for illustration purposes either to reproduce a simulation of exact times or the course of a whole day.

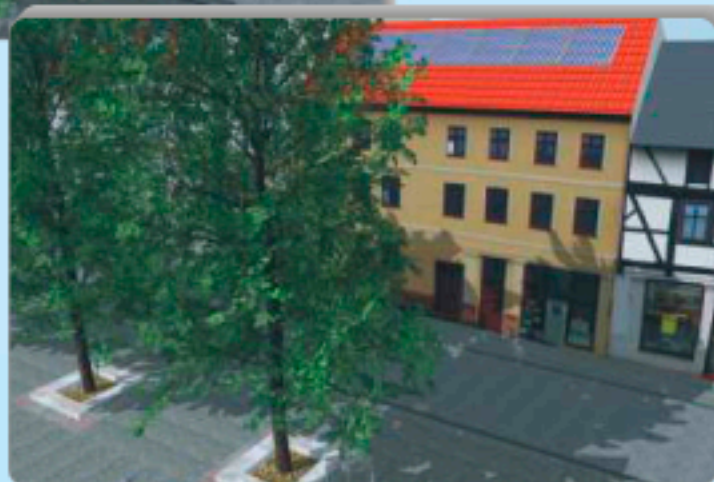
VIS-All® can create films that illustrate and document shadow simulations at any time of day. These can be used for your own presentations or to pass on to clients.

Application: Solar Plants

- Visualise solar plants
- Analyse shadows
- Daytime simulation
- Compare vegetation growth variations
- 3D measuring functions



Shadow course in summer
Situation current



Shadow course in summer
after tree growth



Shadow course in autumn
Situation current



Shadow course in autumn
after tree growth

Example of Application: Technical Plants

Charged up : Plants in 3D

Due to safety regulations access to electrotechnical plants is usually restricted to qualified personnel. However, it is often necessary to demonstrate the basic set-up of an electrical plant.

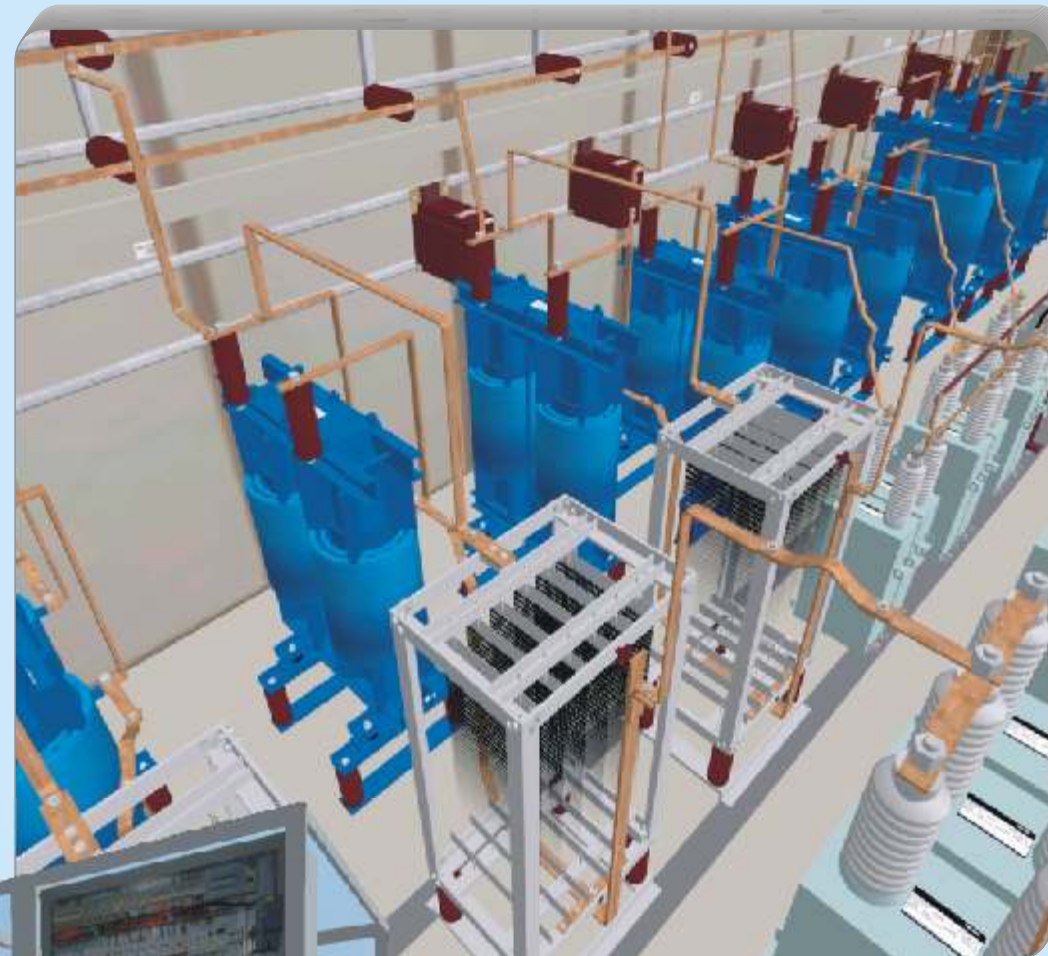
VIS-All® enables you to show the advantages of the third dimension to visitors at a trade fair, use it for illustration purposes in your manual or staff training, to name just a few.

Technical plans of the arrangement as well as photos are the basis for 3D visualisation of the components. Existing comprehensive 3D symbol libraries in VIS-All® can be expanded as required.

VIS-All® Advantages

3D visualisations bring your plants to life and allow you to present them to potential clients and expert personnel absolutely anywhere.

You can move around freely inside the 3D model, switch assembly groups on and off and measure distances.



*Medium tension filter arrangement
in compact construction method
(Manufacturing plant Reinhausen GmbH)*

The 3D model is generated using drawings as well as CAD and photo data.

All export function can be used for the presentation of data.

Videos for marketing purposes that convey the set-up of the plant to interested parties can be produced quickly.



*Inside view of
a switch cupboard*

Clean: Water Treatment in 3D

Information on specialist plants, as in this case a reverse osmosis plant for water treatment, can be illustrated very descriptively for their future operators.



*Visualisation of a
Water purification plant
(LEYCO Wassertechnik GmbH)*

Application: Technical Plants

- Visualise technical plants
- Identify space requirements for components
- Insert 3D plannings in 2D pictures by photo montage
- 3D measuring functions
- Plant documentation

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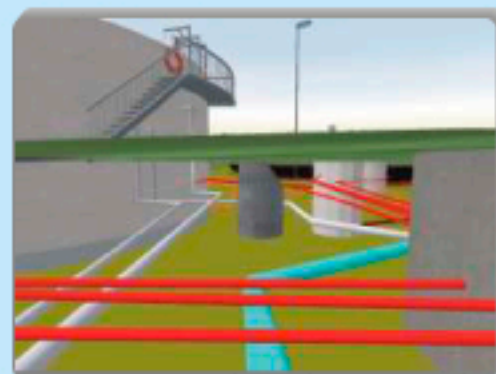


Example of Application: Subterranean Construction Spaces

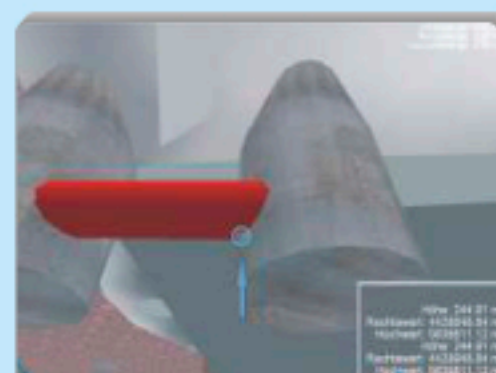
View below the Earth

In the case of subterranean construction projects the view of the construction space on hand and the resulting protective distances are vital.

VIS-All® enables you to show an as-completed drawing of the subterranean cabling in 3D. Areal horizons can be depicted partially transparent thus allowing a "glance below the earth".



View below the Earth



Display of the co-ordinates of the canal run



View inside a pumping station

Example of Application: Flood Prevention

Because of the two serious flood events in 2002 and 2013 in Germany technical flood prevention has become a major concern for politicians, government departments and, not least, the general public.

Procedures like the diversion, reconstruction and building of new dykes, the setup of retention reservoirs or other preventative mechanisms often lead to conflict particularly in urban environments. Local residents do not want the views of "their" river obstructed.

VIS-All® offers functions that support the redesigning of dykes in 3D very effectively.

Further it provides the possibility of flood simulation while assessing the situation given steady water levels.

Data export functions like 3D-PDF formats, Snapshot or video can be used for the purpose of intelligible visualisations for public relations, to engage local residents and encourage civic involvement.



Flood simulation with defensive wall

Application: Subterranean Construction Spaces

- Visualise cable courses
- Compare variants easily
- 3D measuring functions
- Extensive 3D symbol library

Application: Flood Prevention

- Visualise flood prevention mechanisms
- Simulate floods
- Plan dykes

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Technical Solutions: Road Planning in 3D

Finding Routes

The VIS-All® 3D road design module was designed specifically to produce route variations efficiently, thus allowing for the possibility of visualising all feasible routes in the early planning stages and compare them effectively.

With only a few mouse clicks the route can be pasted directly into the locale based on the spatial illustration of all the required data (digital area model, orthophoto, area information).

All that is required to optimise the axis and gradient is to "push" and "pull" the relevant points on the route using the mouse. The new is immediately integrated with the natural ground, yet allowing for visual monitoring of the route from the driver's or any other perspective at all times.

RAL provides Orientation

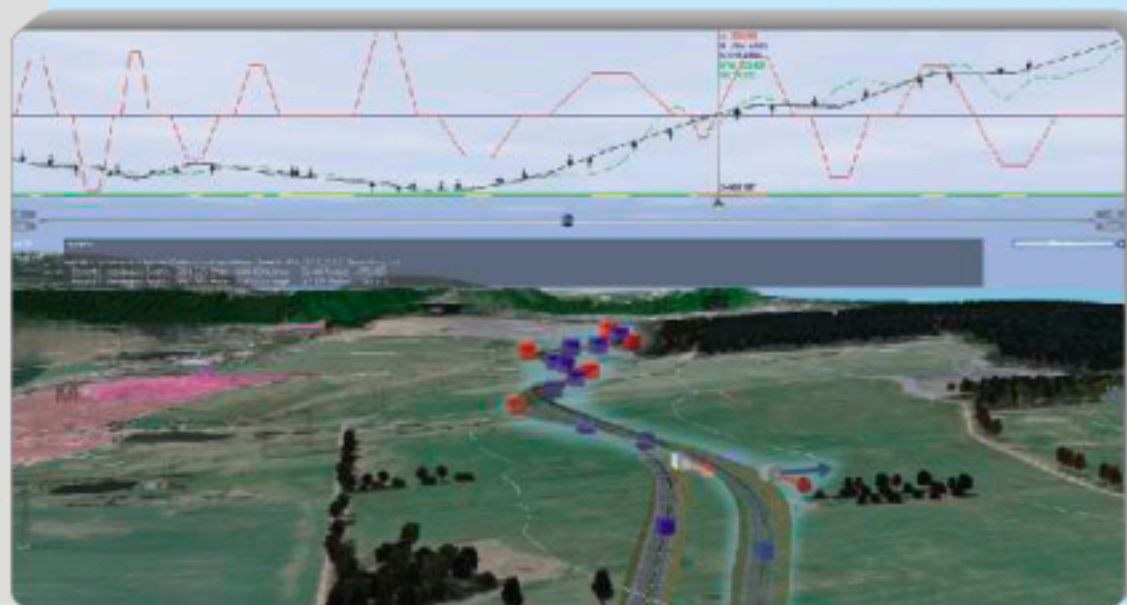
Even during the early stages of construction the individual design parameters are compared with the given RAL values and variances noted.



Danger place "diving"

At the press of a button a check algorithm will find discrepancies in the spatial route planning like diving or jumping and concealed starts of curves.

Display of axis and gradient of a route cut with the DTM



Speedy Cost Evaluation

Based on the plans quantities required or to be removed are calculated instantly. According to the AKV 85* or current AKV2013* unit prices the program calculates the up-to-date total cost.

Bridge and tunnel structures and hubs can be stipulated as place holders in the 3D model and included in the cost analysis.

* refers to regulations specific to Germany

VIS-All® Advantages

VIS-All® is the perfect tool to present the routes found effectively for publicity purposes. Design objects such as noise barriers, roadside planting and construction can be transferred from your CAD system or simply inserted manually into the 3D model.

This way simple designs are generated that offer the basis for technical meetings or 3D visualisations rich in detail to provide information for all parties concerned.

Further Editing

Once the preferred version has been decided on, it can be exported to your usual CAD program to continue working on it during the subsequent planning stages. Export is possible as OKSTRAS, LandXML, 3D-DXF or in other data formats DA40/DA21/REB.

Furthermore you have to possibility of importing externally planned routes into VIS-All®, for example to check the quality of the spatial routes (HViSt*) or to assess the impact on the landscape with the help of visualisations.

* refers to regulations specific to Germany

Visualisation of the street course



Road Planning 3D

- Route finding in 3D
- Optimisation on a real-time basis
- Drive on virtual streets
- Cost estimation
- Check design against RAL*
- Verify spatial lines according to H ViSt *

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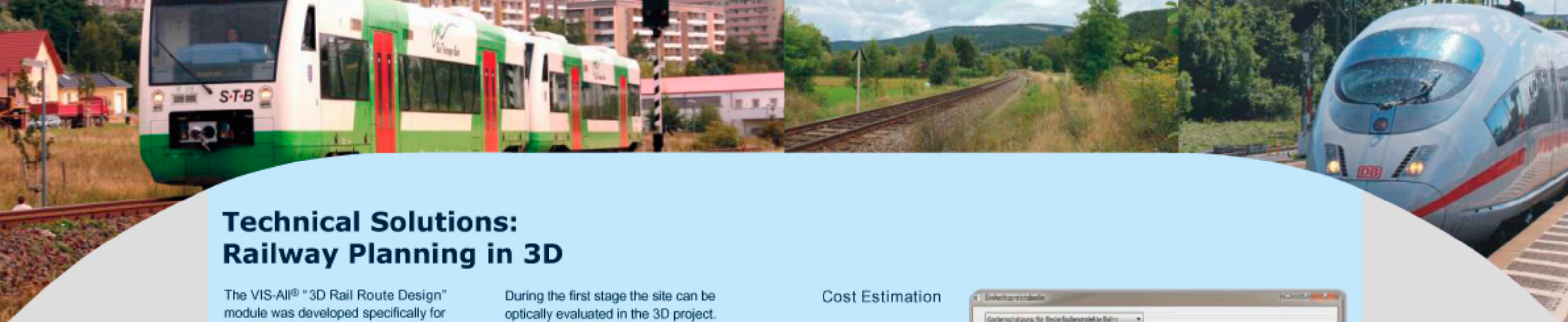
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Technical Solutions: Railway Planning in 3D

The VIS-All® "3D Rail Route Design" module was developed specifically for the planning of new railway line construction and reconstruction projects.

VIS-All® does it all - design, verification, visualisation and cost estimation.

"3D Rail Route Design" takes advantage of new technologies - route planning - in a 3D environment which speeds up the design process and its evaluation.

Base Data

A digital area model of the planning corridor with orthophoto serves as base data. The required area information such as conservation areas added as overlays.

During the first stage the site can be optically evaluated in the 3D project. Functions like display of height lines or the superelevation of the area are supported.

Preliminary Planning of Railway Routes

The engineer first selects a cross-section of the route that conforms to all the relevant regulation. With the help of a spatial curve, and a mouse, construction points are fixed in the 3D area model as a first route design. All the standard design parameters are considered automatically.

Then the 3D model can be optimised by simply adding, moving or deleting construction points. Alterations are updated in real-time.

Cost Estimation

With the help of "3D Rail Route Design" the designer can already track the cost of the new railway route in the early stages.

In the cost overview figures that correlate to the basic local conditions are saved.

Quantities and costs, which present an important indicator in the expected cost-benefit analysis, are calculated in real-time. A log of the costs can be produced in HTML or Excel format.

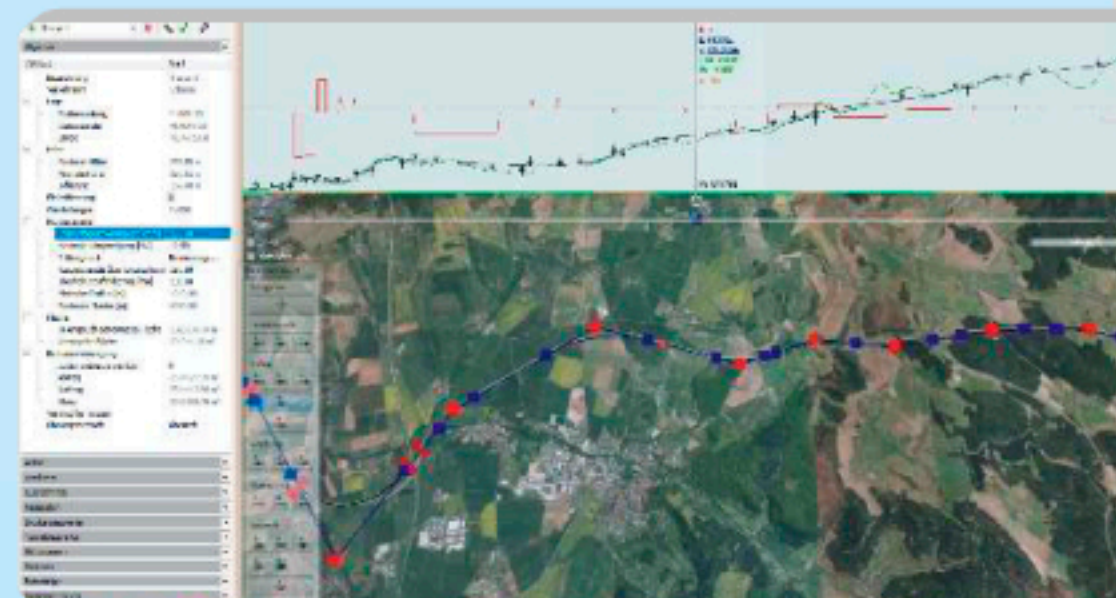
Bezeichnung	Status	Wert	Dr.	Menge	Mengenpreis	Kostenverteilung
1. Oberbau						
1.1 Gleise SBO	Aktiviert	12.315,00	€/m	Automatisch	Benutzerdefiniert	
1.2 Gleisf. F.	Deaktiviert	456.708,00	€/m	Automatisch	Benutzerdefiniert	
1.3 Weiche F.	Aktiviert	124.576,00	€/Stk	Automatisch	Benutzerdefiniert	
1.4 Weiche C.	Aktiviert	123.400,00	€/Stk	Automatisch	Benutzerdefiniert	
1.5 Weiche F.	Aktiviert	694.336,00	€/Stk	Automatisch	Benutzerdefiniert	
1.6 Weiche C.	Aktiviert	694.336,00	€/Stk	Automatisch	Benutzerdefiniert	
1.7 Weiche F.	Deaktiviert	694.336,00	€/Stk	Automatisch	Benutzerdefiniert	
1.8 Weiche C.	Aktiviert	175.196,00	€/Stk	Automatisch	Benutzerdefiniert	
2. Bahndämme						
2.1 P.S.	Aktiviert	1.234,00	€/m²	Automatisch	Benutzerdefiniert	
2.2 Dämmung	Aktiviert	4.167,00	€/m²	Automatisch	Benutzerdefiniert	
2.3 Dämmst.	Aktiviert	12.315,00	€/m²	Automatisch	Benutzerdefiniert	
2.4 Gradst.	Aktiviert	4.167,00	€/m²	Automatisch	Benutzerdefiniert	
3. Ingenieurbau						
3.1 B.	Aktiviert	12.315,00	€/m²	Automatisch	Benutzerdefiniert	
3.2 Talbrück.	Aktiviert	1.234,00	€/m²	Automatisch	Benutzerdefiniert	
3.3 Tunnel	Aktiviert	126.000,00	€/m	Automatisch	Benutzerdefiniert	

Screenshot of a cost overview

Verification of Design Parameters

In order to guarantee route planning that conforms to all the relevant regulation, the draft is checked for RIL guidelines 800.0110 (refers to regulations specific to Germany). Deviations are displayed divided into standard and marginal safety values.

Route planning with test diagram



Civil Works

Alongside the actual route additional important civil structures like bridges, tunnels, switches, bulkheads and platforms can be defined using a mouse and inserted in the 3D project.

Flyovers, etc. required to re-establish the existing road network can be visualised and designed directly in the 3D model.

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VIS-All® Data import and export

Importing data into VIS-All®

VIS-All® is a 3D-frontend for CAD and GI systems which is why it is integrated directly in many systems.

For the import of external data the following loaders are available:

- CityGML
- DXF/ DWG
- ASCII files in DA 21, DA 40 and REB (DTM) format
- Shape
- RasterDTM
- SRTM

During the import process users are supported by an assistant to ensure that interfaces can be used after only a short induction period.

Exporting data from VIS-All®

Once 3D scenes have been designed and finalised they are to be passed on to clients or partners.

There are several ways of doing this:

- Simple Snapshot as image
- Configurable Snapshot for graphics output of any size
- Generating videos including shadow and symbol animation
- VRML
- CityGML
- 3D PDF
- Google Earth
- LandXML
- OKSTRA
- As VIS-All® archive for the free VIS-All viewer
- 3D print

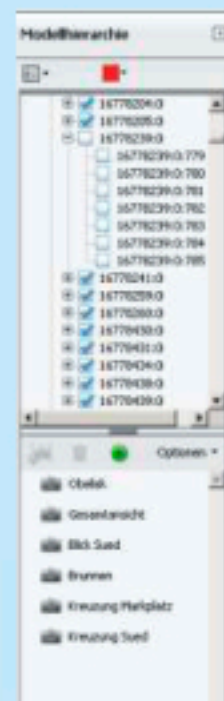
3D scene
in Google Earth



Marktplatz



3D PDF view
of a town



The World of VIS-All® Modules

VIS-All® can be used in many different fields. Each task requires different functionalities and interfaces which is why we offer three packages.

VIS-All® Standard

For the presentation of simple 3D models and data verification

Functionalities and scope of interfaces:

- Comprehensive 3D symbol library, ca. 1000 symbols
- Illustration of 3D symbols (trees, masts, cabling, etc.)
- Illustration of 3D buildings and surface areas
- Unrestricted navigation, navigation above ground at eye level
- Stipulation of topographies and contour lines
- Management of several horizons
- 3D measuring function
- Incorporate different weather conditions
- Project administration
- Import: DXF/DWG, GEOgraf interface Grid DTM, SRTM (free NASA-DTM Data)
- Export: VRML, LandXML

VIS-All® Professional

To create engaging visualisations and have more export options

Functionalities and interfaces in addition to VIS-All® Standard:

- Texturing of buildings and surface areas
- Generating videos and oversized images
- Creating groups of elements and applying blanket changes to the same
- Full screen mode with stereoscopic view (dependent on hardware)
- Import: Direct-X Symbole, Shape, ASCII files in DA 21, DA 40 and REB (DGN) format
- Export: DXF, 3D PDF

VIS-All® Premium

For the effective creation of 3D models from CityGML data, use of the presentation and technical analysis possibilities

Functionalities and interfaces in addition to VIS-All® Standard and Professional:

- Calculation of precise shadows, time and day simulation
- Animation of wind power plants, areas and 3D symbols
- Insertion of background images via ground survey control points
- Freely place 3D elements
- Traffic sign symbol library
- Import: CityGML
- Export: CityGML, Google Earth, OKSTRA

VIS-All® Standard

VIS-All® Professional

VIS-All® Premium

Modules for 3D route planning for railways and roads

The modules for 3D route planning for railways and roads are licensed in addition to the respective package.

Support and maintenance

A support and maintenance contract is available for all licence configurations.



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When **Software-Service John** was first founded in Ilmenau in 1993. Its services initially comprised of developing software interfaces and services to ensure the most error and loss free data transfer between CAD and GI systems in the field of geodesy. The distribution and support function for various partners has been the mainstay of our company from the beginning.

With a lot of experience in the field of programming and the application of specialist software the company is ideally placed to provide solutions for a wide range of inquiries.

In 2009 the company was incorporated into **Software-Service John GmbH** and moved to new offices with better working conditions for all our staff, generous training and meeting facilities as well as ample parking for staff and clients.

Since 2013 the product range has been expanded with the introduction of **360° Panorama Tours**. For our first test object we used our company premises and a selection of rooms, which you can find at **www.vis-all.de**.

Our current team is made up of 15 employees, data with specialist qualifications and work experience in the fields of geodesy, civil engineering and information technology, whose aim it is to provide comprehensive guidance and support to our clients.

Among our many partners and clients are ÖbVI- und Vermessungsbüros, utilities companies, various administrative bodies of federal states, regions and councils, universities, educational establishments and other software providers.

In order to realise multidisciplinary solutions and larger contracts we have strong relationships with long-standing partners.



Convince yourself of our services and the advantages of our software. **zu dürfen.**

You can obtain a **free, fully functional** VIS-All® 3D demo version from us or one of our authorised partners.



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Our Partner

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