

# Bluethink® Supervisor Technical White Paper



***Supervisor** is an easy to use web-based application for effective definition, configuration and assembly of Building Information Models (BIM). **Supervisor** represents a major step forward for construction builders and contractors who seek improved margins from applying industrial concepts to their creation, documentation and sales of standardized, yet flexible, building types. Integration with the BIM system enables controlled mass customization without quality reduction. Drawings, cost estimates and other outputs are fast and easy made available.*

**Supervisor** enables web configuration of any building types within pre-defined options for project- and customer modifications. Typically, the relevant building types are a combination of market demands and industrial building production methods. Pre-defined *building type options*, and any dependencies between these – defined by the construction builders or contractors, are defined as *configuration rules* in the application. Based on interactive web configuration executed by the user, Supervisor assembles a complete BIM, which provides a detailed representation of the configured instance of a building. The BIM is assembled with pre-modeled *building type elements*. *Assembly rules* define the hierarchy of the building type elements; control the selection of these elements and any dependencies between them. The assembler ensures that the generated BIM describes a valid building in compliance with defined configuration.

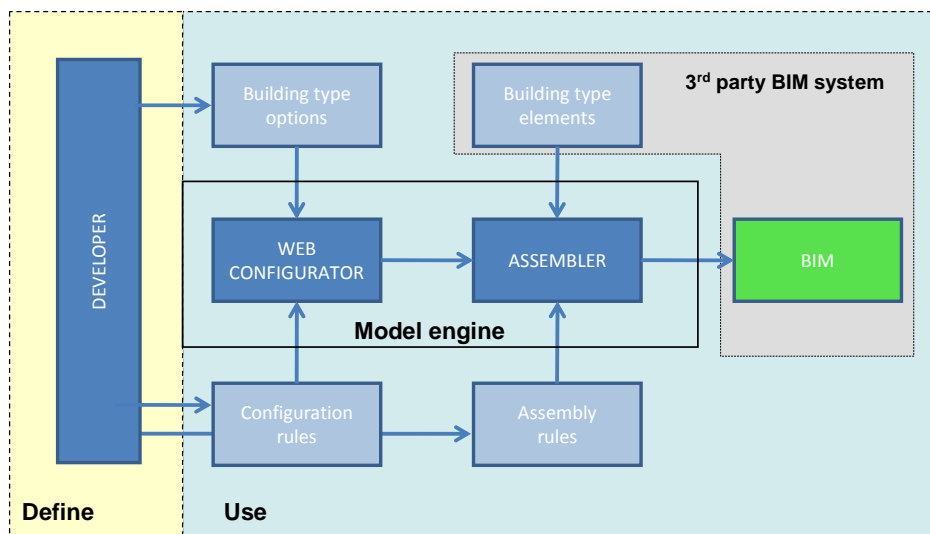


Figure 1: Supervisor concept for interactive definition, configuration and BIM assembly

Using **Supervisor** for representation of the building type secures a consistent and more accurate model across the different building projects. Assembly of the model is, done in less time with fewer resources, compared to manual design and traditional modelling in a BIM system. When completed, the BIM is ready for further 3D viewing and visualisation, as well as production of 2D construction drawings in a traditional BIM system. The user can also export the completed model to other applications, such as estimating- and purchasing tools for detailed calculations.

The Developer can be used for an easy and well supported development, definition and maintenance phase of building types. The developer and product owner will see the link and dependencies between options and building type elements and get help on defining the Configuration and Assembly rules.



## Functionality:

### Supervisor Base module

Supervisor enables effective navigation and configuration of building types with pre-defined options. The base module also include upload and download of drawings/reports/documents and building type configuration versioning.

Supervisor works close integrated with third party BIM systems and automatically assembles a BIM according to chosen configuration. The BIM provides a detailed representation of the configured instance of a building type. Production of drawings and reports and export of the BIM to other applications depends on the possibilities and limitations in the BIM system used.

### Key Features:

#### Web Configurator:

- The web Configurator can hold a wide variety of different building types
  - Building type option program that enables multiple level attributes and attribute groups where each attribute can hold multiple options or values
- Configuration of a building type is easy and secure
  - Create new building configurations from a pre-defined set of building types
    - Select desired building type (and version) to configure
  - List of all created configurations of a building type
    - View, edit or delete configurations
  - Navigate within a configuration using tree view navigation or interactive graphical view navigation (depending on availability for each product)
  - Search available options by text string and view search results with link to related or similar building type options
  - Change a building type configuration by selecting options within defined attributes and attribute groups
  - Log all configuration changes
    - Undo/redo
    - View/print/save configuration log
  - Versioning of building types and configurations
    - Save and publish official versions of building type configurations
    - Make new revisions of building type configurations
    - Copy or delete saved versions of building type configurations
- Configuration and documentation of projects or customers
  - Overview of projects or customers
  - Select existing or define new projects/customers with description and details
  - Link building configurations and instances to a project or customer
  - List all building instances in project or customer
    - Collect documentation for customers, projects and buildings
    - Manual drawing upload from BIM system
    - Manual document upload
    - Configuration report (showing all existing and chosen configuration options)

#### Assembler

- Automatic assembling of a complete BIM
  - No need for time consuming and error prone manual work

- Only use of predefined and quality assured building parts and elements
- The same set of building type elements can be assembled to a wide range of different variations of the same building type within minutes.

## Developer

- Develop and define Building type options
  - Start with a simple Building type with few options and expand when needed
  - Add or delete Attributes, attribute groups or options
- Develop and define configuration and assembly rules
- Preview Supervisor Configurator and assembly
  - Easy to communicate and demonstrate the product when still in development
  - Easy to debug both the option program and the Product BIM
- Maintain product
  - Revision control of products and product revision
  - Control which products that are released and published

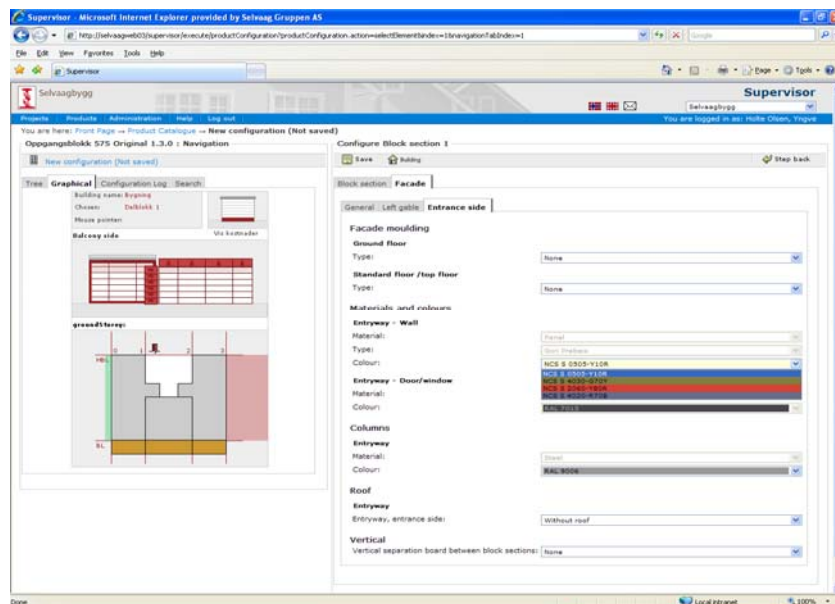


Figure 2: Web-interface for configuration and assembly of BIM

## BIM system Integration

- Integrates with Bentley Architecture, Autodesk AutoCAD Architecture 2008, Autodesk REVIT 2009 and DDS-CAD House Partner
- Generate an instance model in the BIM system based on building configuration
- Iterative switching between BIM system and web configurator
- BIM system functionality depends on chosen environment
  - The generated instance BIM can be added, combined and used in the same way as a traditional manual generated BIM
  - DDS-CAD House Partner enhanced functionality
    - Automated views, drawing output and quantity output



## Estimation data export connector

To enhance the BIM system estimation data export (quantity takeout) the Estimation data export connector adds defined elements and values to the export of non-BIM type of information, and translates or maps BIM information when needed. The module offers an XML type connector towards the Estimation Application.

## Purchasing data export connector

The Purchasing data export connector is similar to the Estimator data export connector, but adds and translates purchasing related information instead of estimation related information.

## Key benefits:

- Time to market improvement
- Reduced design time
- Fast, accurate and effective design/configuration/assemble process
- Design comply with embedded company and industry rules
- Reduced time for obtaining building license
- Reduced time for calculations and analysis
- Reduced number of changes
- Productivity increase
- Reduced engineering time
- Industrialized production
- Reduced construction time
- More accurate and consistent drawings
- Cost reduction
- Reduced material cost
- Reduced warranty cost
- Reduced operation cost
- Quality improvement
- Error reduction

## Related products:

- Bluethink® **Experience**
- Bluethink® **House Designer**

## Related services:

- **Support:**  
Technical Support gives our customers key personnel access to support engineers for assistance when technical issues occur, as well as software patches and product enhancements.
- **Training:**  
Training of our customer's super-users and end-users are provided, both as standard classroom training at Selvaag Bluethink, as well as customized on-site.
- **Consulting:**  
Installation and implementation services are important elements in Selvaag Bluethink's offering. The implementation services are based on the methodologies developed in parallel with the software products, ensuring the customer a best possible starting point for use of our products.

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## System requirements

- Microsoft Windows 2000, XP or Server
- Internet Explorer Web browser
- Microsoft SQL Server database. Must be licensed separately
- Standard J2EE applications running on any J2EE application server.
  - Verified on JBoss 4.0.5 Application Server
- Preferred 3<sup>rd</sup> party BIM system must be licensed separately:
  - Bentley Architecture
    - See recommended system requirements at [www.bentley.com](http://www.bentley.com)
  - Autodesk AutoCAD Architecture 2007
  - Autodesk AutoCAD Architecture 2008
  - Autodesk REVIT 2009
    - See recommended system requirements at [www.autodesk.com](http://www.autodesk.com)
  - DDS-CAD House Partner
    - See recommended system requirements at [www.dds.no](http://www.dds.no)



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