



SOLIBRI

MODEL CHECKING FOR QUALITY



S O L I B R I M O D E L C H E C K E R v 7



Friday, October 14, 2011



Agenda

- 18:00 **Opening of the event**
Sales Director Jaakko Jauhiainen, Solibri, Inc.
- 18:05 **Solibri Model Checker v7 - Overview**
Jaakko Jauhiainen
- 18:20 **Nye funksjoner**
Solibri Fellow Lars Chr Christensen
- 18:40 **Solibri Partnere NORGE**
CAD-Q, DDS, Graphisoft and NTI Nestor
- 18:55 **Mingling med enkel servering**

Solibri, Inc.

Develops and markets Quality Assurance/Quality Control (QA/QC) solutions that improve the quality of OpenBIM-based design and make the entire design process more productive.



Offices:

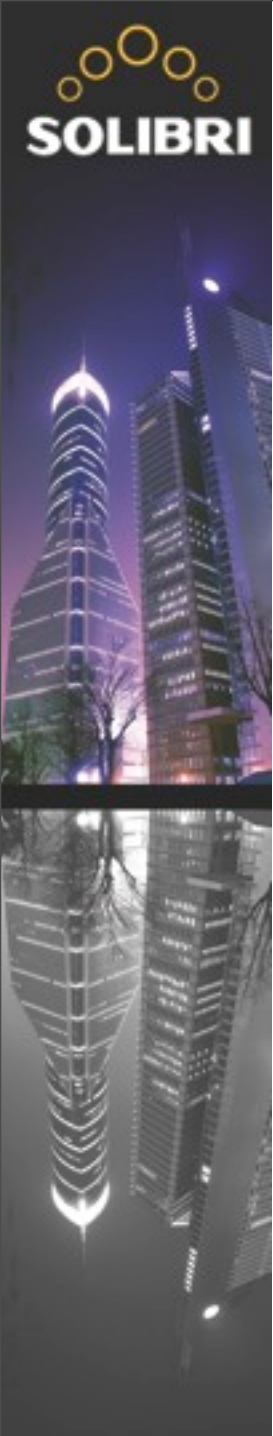
- ■ Helsinki
- Scottsdale, Arizona, USA

Partners:

- ■ North America - 12 partners
- Europe - 13 partners
- Dubai, Hong-Kong, South-Korea,
- New Zealand, Australia

Customers:

- Building owners, construction companies, consultants, architects and engineering firms
- Users in 64 Countries

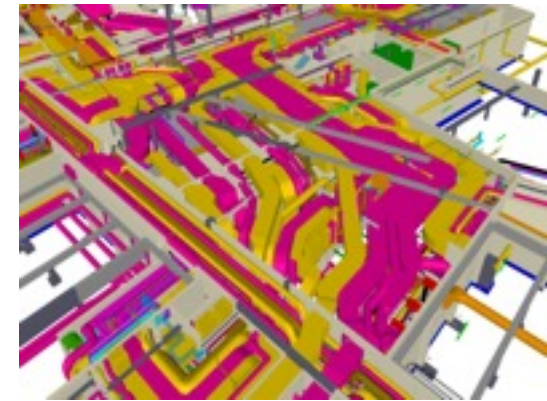


Trends in Construction

- Quality Cost (waste) is too High
- Productivity
- Buildings are Getting More Complex
- Energy Efficiency Requirements

=> BIM Process

=> Proper Quality Assurance is a MUST



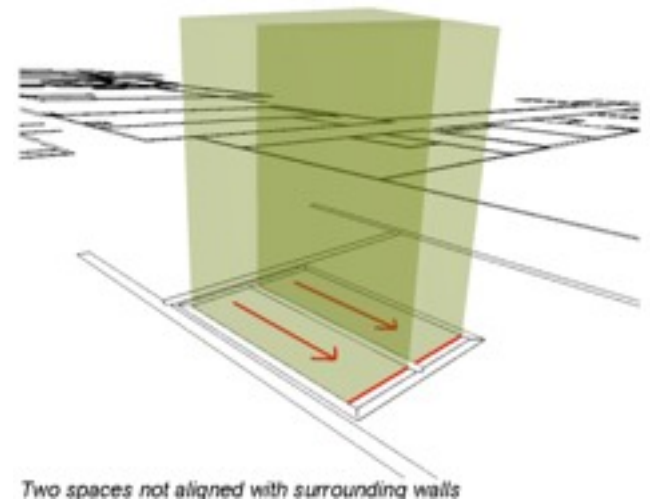


Rule Based Model Checking

- Building has components that can be recognized and components have a function.
- It's like a spell checker in word processing, but instead of words it analyses building components of a BIM file.

typing misstake < --- >

1.1.2.1. Space Validation Results

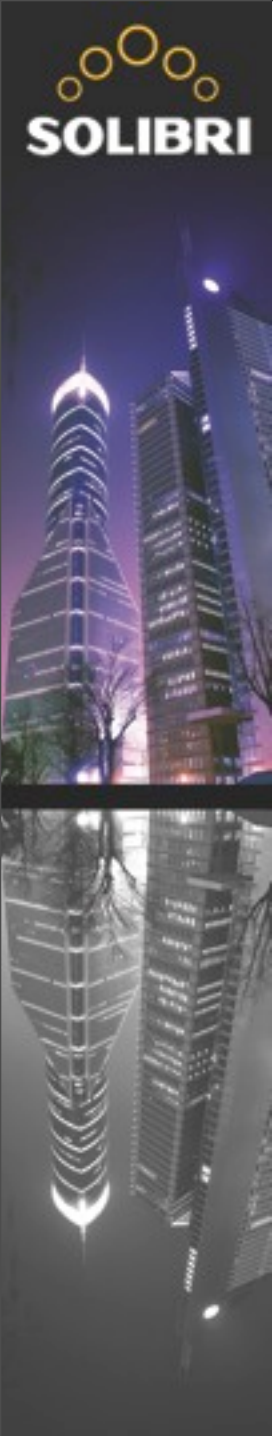


Two spaces not aligned with surrounding walls



Requirements

- **Statsbygg:** For each storey information about the total gross area [no:BTA – Bruttoareal] must be contained in a “BTA space object” (IfcSpace). BTA is the area of each storey reaching out to the exterior of all enveloping building parts (walls etc). The precise definition is found in Norwegian Standard NS 3940 “Areal- og volumberegning av bygninger”. The sole purpose of this “BTA” object is to express the total storey area including walls.
- **ISO 21542/Accessibility:** The clear maneuvering space at floor level in front of the toilet seat and the washbasin shall be 1 500 mm x 1 500 mm, except for type C where 300 mm under the wash basin is accepted as part of the total manoeuvring space. The minimum free clearance beside the toilet seat shall be 900 mm, preferred 1 200 mm for lateral transfer and assistance.
- **National BIM Guidelines, Finland:** In the architect’s BIM, the model for each story comprises the floor of the story with its structures (ground floor or floor slabs depending on the story). The architect need not model the foundations, but the footing structures must be modeled at least for their above-ground parts. The attic floor slab and the roof substructures are to be modeled as a separate story in the Architectural BIM.



Rule Examples

Model Checking for Quality

- BIM Guide Validation
 - Senate Properties BIM Requirements
 - GSA BIM Guide Requirements
 - Company Specific BIM Standards
- Building Code Checking
 - Accessibility Rules
 - Egress Analysis
- Architecture vs. Structural Comparison
- Spatial Coordination (incl. collision detection)
- Version Management
- Space Checking
- Key Figures – alerts when off limits
- Quantity Take off - improve accuracy
-



Solibri Model Checker™

Input

- Reads ISO standard IFC files
 - BuildingSMART Certified
- DWG files

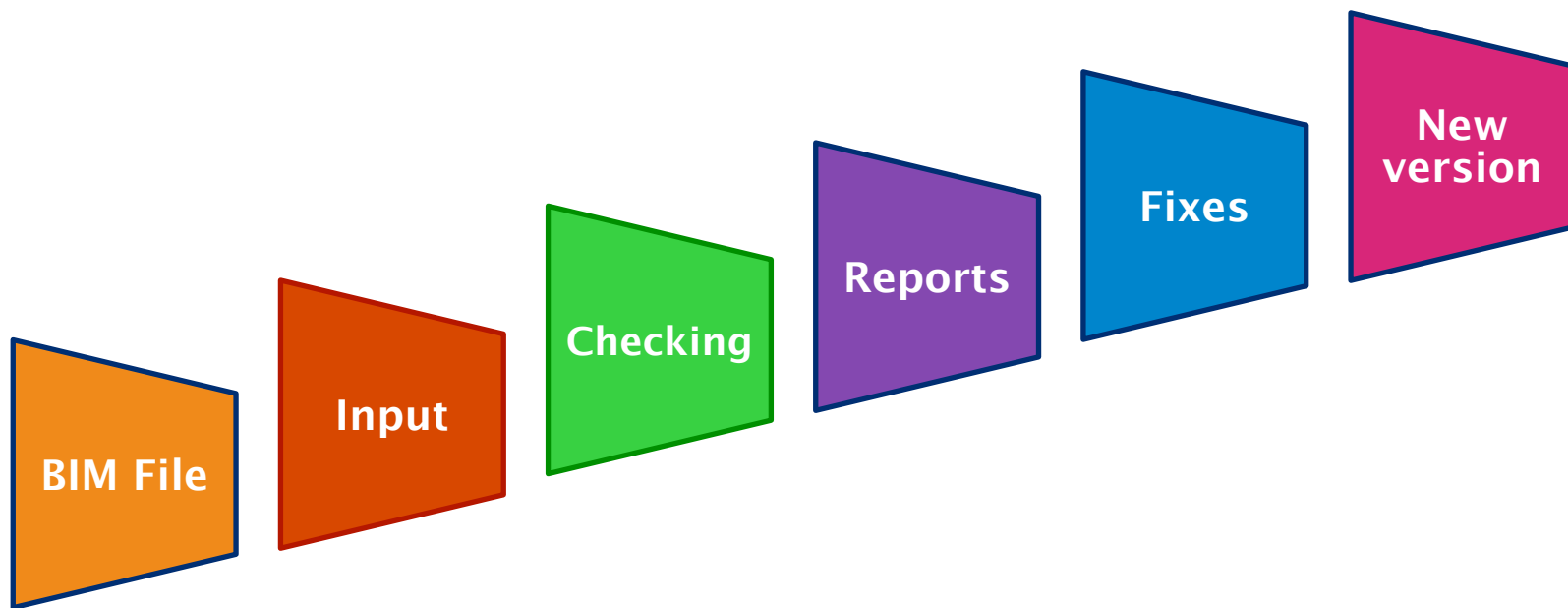
Checking

- Rule-based Checking
- Merging Models
- Measure Quality of BIM Models and Designs
- Spatial Coordination
- Building Code Conformance
- Custom Rules
- Information Takeoff (ITO)

Reports

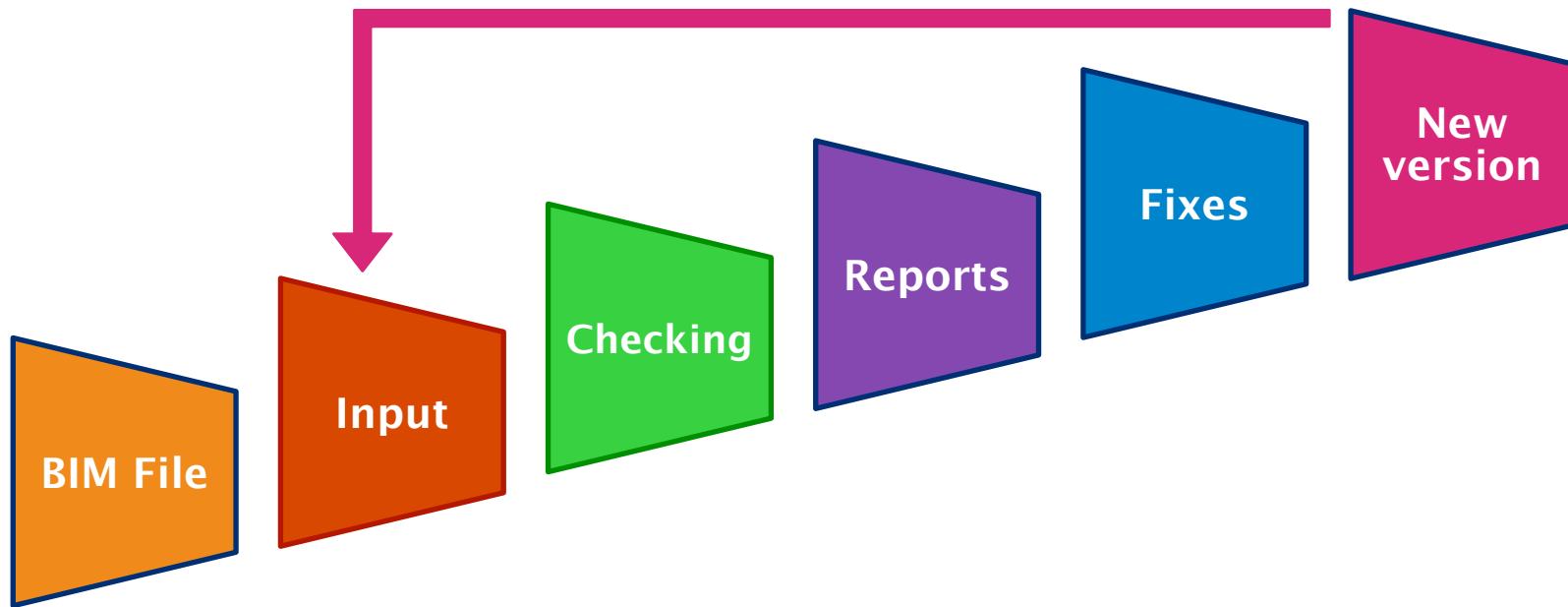
- Reports (customized)
- BIM Collaboration (BCF)
- Solibri Model Viewer
 - Reads IFC and SMC files
 - Freely available at www.solibri.com

Solibri Model Checker™ Quality Assurance Process



Solibri Supports the Whole Process

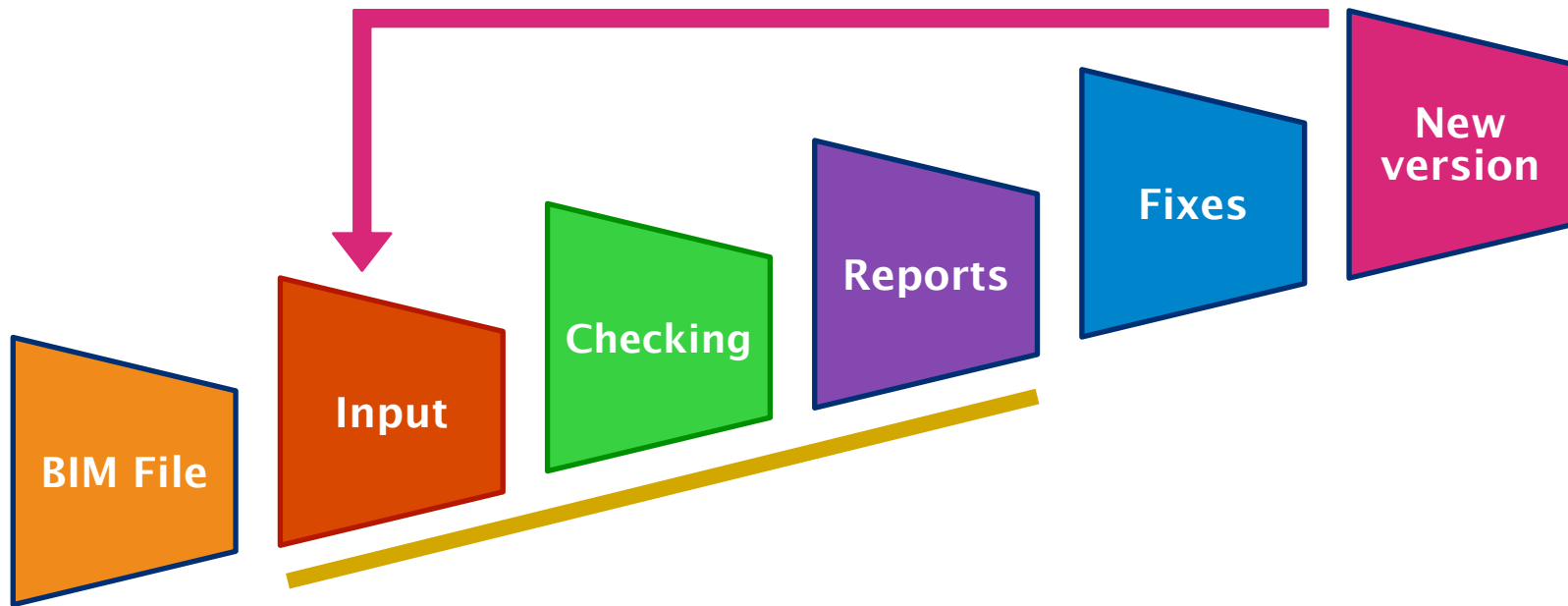
Solibri Model Checker™ Quality Assurance Process



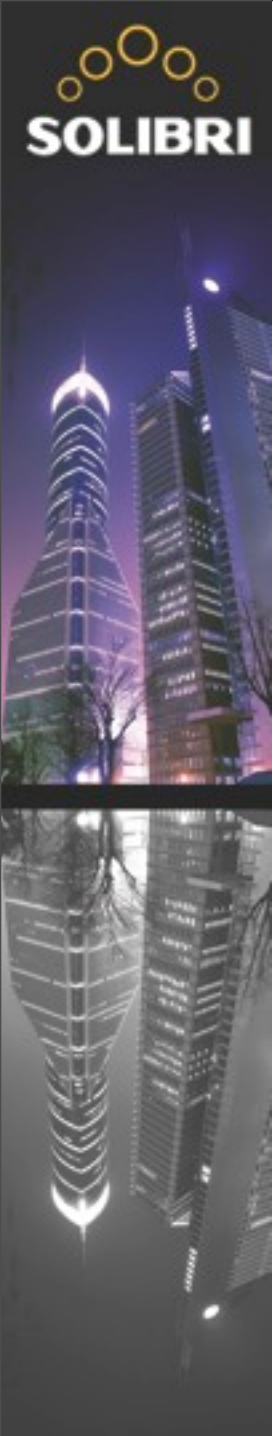
Solibri Supports the Whole Process



Solibri Model Checker™ Quality Assurance Process



Solibri Supports the Whole Process

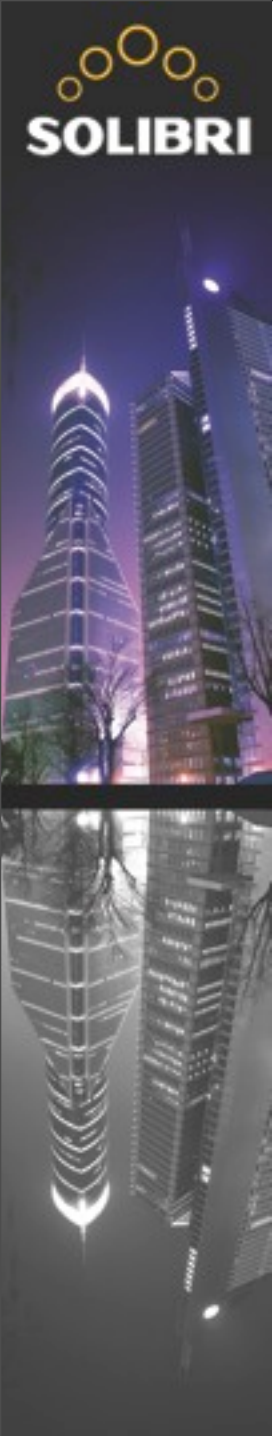


Solibri Model Checker™

Model Checking for Quality

Demonstration

Jaakko Jauhiainen, Sales Director, Solibri, Inc.



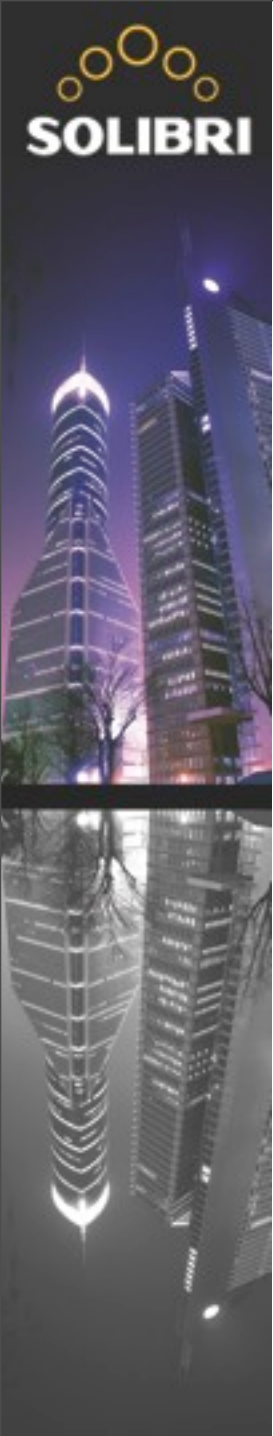
The Most Effective and Productive QA and BIM Analysis Process

- High Performance
 - Very fast automated model checking speed
 - Shorter QA time
- Support for tasks and job functions: roles
 - SMC v7 is a special tool
 - Solibri Model Checker supports experts in specialized tasks
- Highly developed Rulesets
 - Less but more meaningful results
 - More efficient QA/QC
 - More useful checking results
 - Solving design issues is more effective
- Unsurpassed Versatility
- Usability
 - High quality user interface including what is needed, only
 - More efficient use



Best Practises

- Centralized management and distribution of companies practises as Solibri resources
- Implement best practices with Solibri Model Checker
- Enforce best practices with Solibri Model Checker



Total Cost of Ownership (TCO)

- **Centralized Management of Solibri Resources**
 - Cost effective SW system administration
- **Silent Installation**
 - Efficient SW distribution
- **Excellent UI and Usability**
 - Easy to learn - steep learning curve
 - Fast time-to-benefits
- **Efficient Use**
 - Roles: for use at the organization level
 - Simpler, more efficient and effective QA/QC process
 - Fast implementation