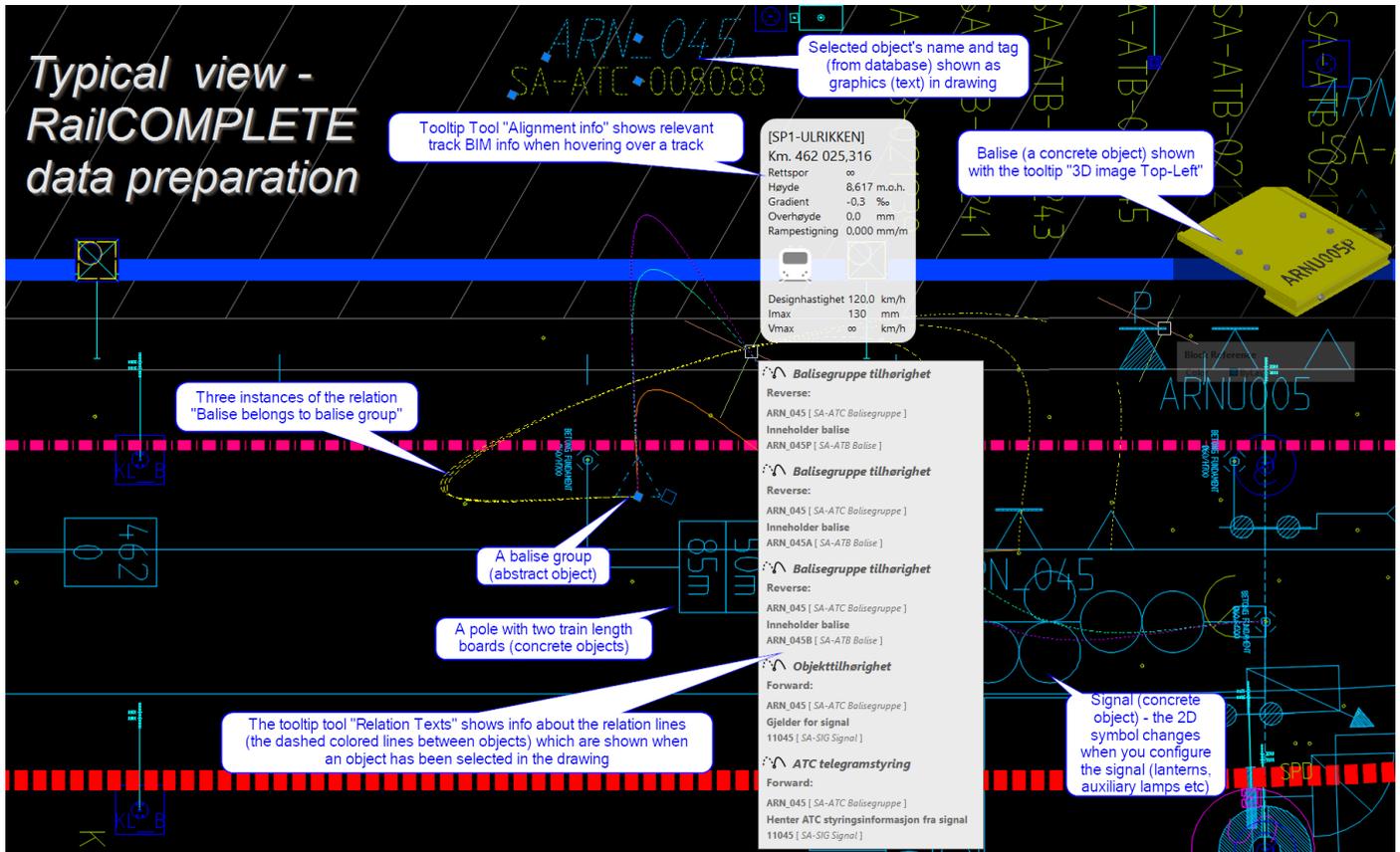




RailCOMPLETE is an AutoCAD® plug-in for the design of railway systems with high level of detail. With low effort you will produce high quality models in 2D and 3D.



RailCOMPLETE® makes railway wayside infrastructure planning easy. Complex data is gathered in one place and is ready for cross-disciplinary use at all steps of the planning and construction process.

## BIM

With RailCOMPLETE® you will build a BIM model for railway equipment along an alignment – a track.

The BIM objects include a 2D symbol, a 3D object model, standard values and a rule set governing their behavior.

All BIM objects in a model form a logically connected network which makes drawing updates easy. Whenever an object has been changed or moved, the whole model, including tables, will be updated with a few clicks.

## 10 reasons to choose RailCOMPLETE

1. Reduce design errors and planning costs
2. Full planning environment for railway engineers
3. Over 400 BIM objects, many with rule checks
4. Automated tables
5. Automated schematic drawing from BIM model
6. Export data to capacity evaluation tools
7. Powerful built-in automation language
8. Integrated support for construction stages
9. Easy export to 3D with adjustable Level Of Detail
10. Automated train route lists for signaling

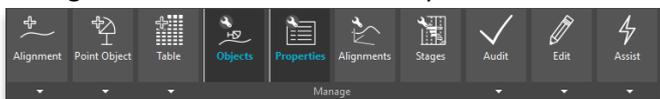
«We started the development of RailCOMPLETE because we are passionate about modernizing the railway industry and because we firmly believe that this is the best way to reach an effective BIM work process.»

- Claus Feyling, CEO



## A complete user environment

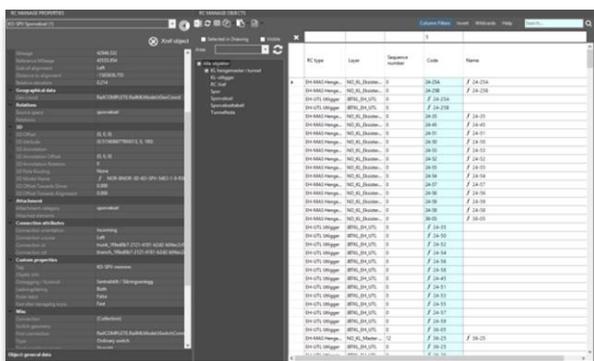
An intuitive user environment with menus and tools making BIM model construction easy.



A user must only know the most common AutoCAD functions – RailCOMPLETE covers the railway aspects. Nevertheless, all AutoCAD functions are available, and many of them are taught to do "RailCOMPLETE things".

## Object Manager

RailCOMPLETE is a powerful database tool for BIM objects. Object properties can be searched, sorted, modified and visualized. Mass updates are easy.

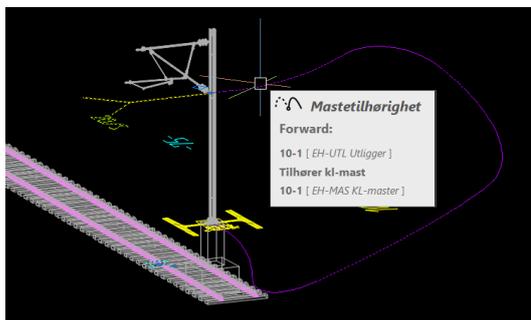


## Linear Referencing System

With RailCOMPLETE, all tracks (alignments) may be used as a linear referencing system for objects. All BIM objects along a track has a defined mileage. Change an object's mileage property, and it moves.

## Relations

A BIM model relation is established by point-and-clicking on two objects in the model and selecting the desired relation type. Relations may then be used for logical reasoning and for "following the trail" when searching for info from object to object, e.g. when building a table.



## Multi-disciplinary

RailCOMPLETE is a multi-disciplinary and low user-threshold tool. Modeling track, catenary, signaling, low-power and boards is ideal with RailCOMPLETE.

## Tables

RailCOMPLETE automates the production of tables.

Tables are a central part of any engineering planning process. Even if all model data are contained in the BIM model, people will always need tables for overview.

RailCOMPLETE is shipped with many predefined tables, but defining your own tables is also easy. Tables for turnouts, signals, interlocking, signs and boards, catenary masts, earthing and general equipment lists are standard.

After modifying objects in the BIM model, simply select your tables and press «Refresh».

A table is exported to Excel with just one click.

Nr	Profil eget spor	Spenn-lengde	Maste- type	Retning	CL mast CL spor	System
10-1	10 100	75	Bjelkemast, ny	-X	35	System 20
10-3	10 850	70	Bjelkemast, ny	-X	35	System 20
10-5	10 1550	60	Bjelkemast, ny	-X	35	System 20

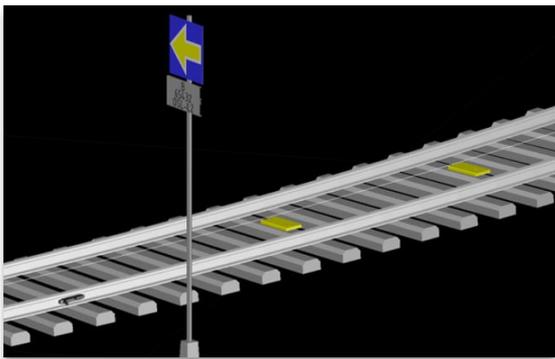
## Model check

RailCOMPLETE does silent model checking as you work. Objects have configurable model checks, based on your railway administration's technical regulations and expert rule knowledge. The time to discovery of design errors is thereby reduced – such as distances between objects from the same or from a different engineering discipline.

Model check		
Sikkerhetsavstand til KL	⚠	3.505: KL-Mast [Bjelkemast, ny] er innenfor 6 meter. ØK
Avstand til spor venstre	✅	6.209: OK - Innenfor byggetoleranse med god margin
Avstand til spor høyre	❌	2.319: Ugyldig - For nær spor '[spor1]', øk avstand
Antall OCP områder	✅	Objektet er ikke omsluttet av noen OCP områder

## 3D

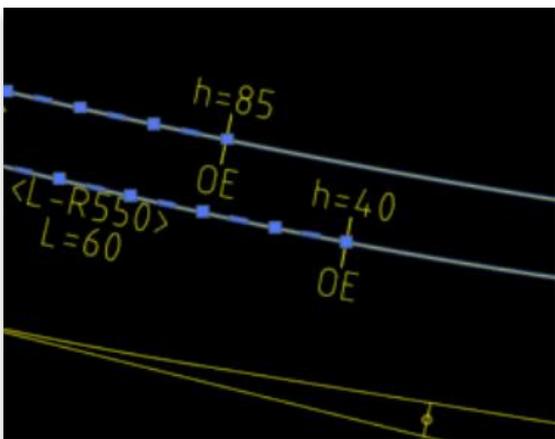
RailCOMPLETE is both a 2D and a 3D tool. The BIM objects delivered with RailCOMPLETE have 2D symbols and object-specific 3D models. Changing the object variant will change the 3D model correspondingly.



The total 3D model is generated as an export from a RailCOMPLETE model (dwg file(s)), where you can set the Level Of Detail and the amount of annotation. Text on boards and objects are fetched from their current database values, and «painted» on the 3D objects with the right size, font, placement and orientation. Linear objects such as railway tracks can be exported using a short piece of track with sleeper, either swept or iterated along the alignment, respecting local gradient and cant.

## BIM annotations

By turning on and off various choices for annotation, each technical discipline can annotate their drawings the way they want to see them. Zoom to scale annotations.

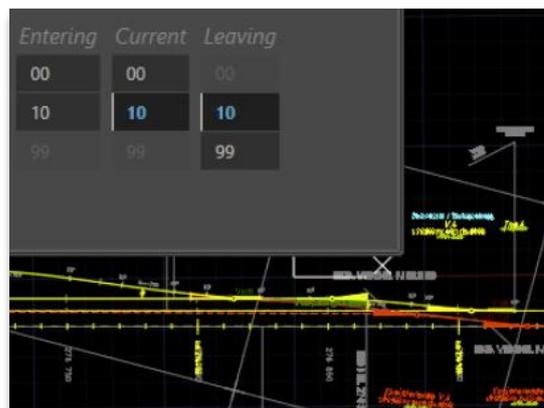


Choose from a range of geometry annotations, vertical profile, fouling points, mileages, reference alignments, chain breaks, occupation sections, earthing etc.

## Stages

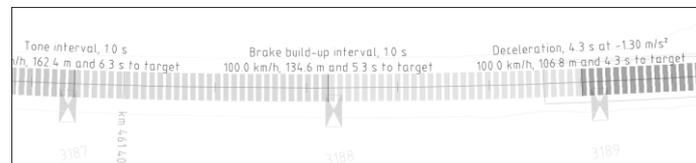
With AutoCAD you may distribute your objects on several layers representing different from-to time spans. With RailCOMPLETE you can pick up this information and collectively turn layers on and off corresponding to the time span you want to work with. You may show a

configuration corresponding to a certain construction stage, you may show several stages simultaneously, you may show objects that leave or enter a stage, or combinations of all the above. The Stage Manager also controls colors for objects that enter or leave a stage, e.g. showing black/red/yellow (unchanged/in/out) towards a stage when printing to PDF using CAD layouts.



## Braking curves

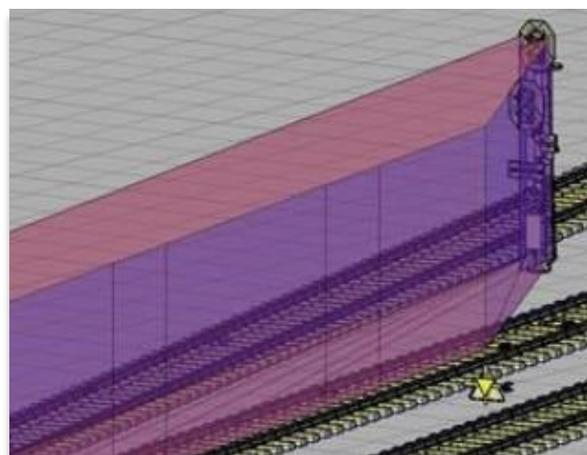
ATP braking curves are calculated from track data and objects such as turnouts, boards or signals.



## Sighting

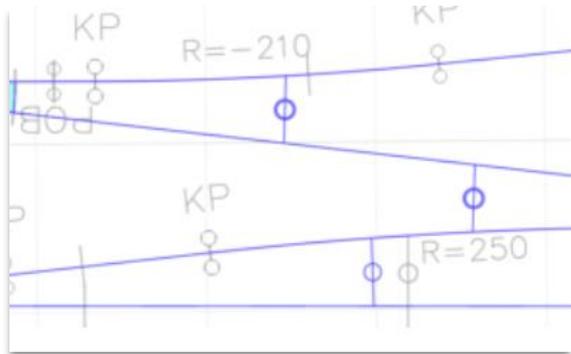
Automated sight lines and sight areas are available.

Extruded sight areas may then be used for collision control in your 3D viewer of choice.



## Fouling points

RailCOMPLETE calculates and shows fouling points based on turnout data and their surrounding track geometry. Fouling point calculations may be used anywhere in tables, in model checks or as drawing annotations.



## Configurability – the Lua language

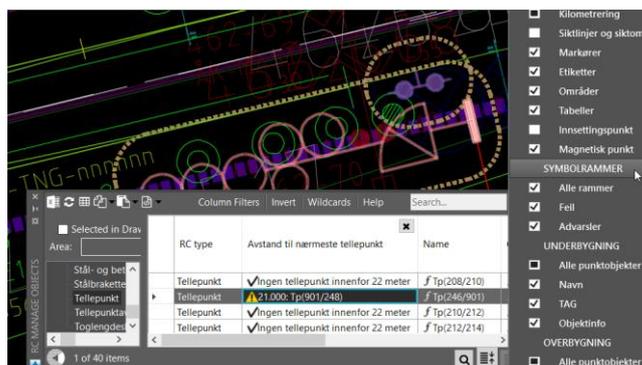
Users have access to the embedded automation language *Lua* to configure objects automatically. For instance, a text in a drawing may be defined using a Lua formula which pieces together information based on a database search reaching out from the object of interest.

```

Output: Lyssignal, 2-lys
Current Object: Klasse-B signal : ID:a87233a6-ade
Run Code Auto-Run

1 if MainSignal == "Hs3" then
2   if Function == "home" then return "Lyssignal, 3-lys; Innkjørhovedsignal"
3   elseif Function == "exit" then return "Lyssignal, 3-lys; Utkjørhovedsignal"
4   else return "Lyssignal, 3-lys"
5   end
6 elseif MainSignal == "Hs2" then
7   if Function == "home" then return "Lyssignal, 2-lys; Innkjørhovedsignal"
8   elseif Function == "exit" then return "Lyssignal, 2-lys; Utkjørhovedsignal"
9   else return "Lyssignal, 2-lys"
10  end
11 end
12
13 return "Prosessnavn ikke definert"
  
```

You may also define your own model checks for selected objects. Warnings and errors are then shown graphically in the drawing as well as in the Object Manager.



## Compatibility with other formats

RailCOMPLETE can import and export alignment models in LandXML format, as well as dwg formats.

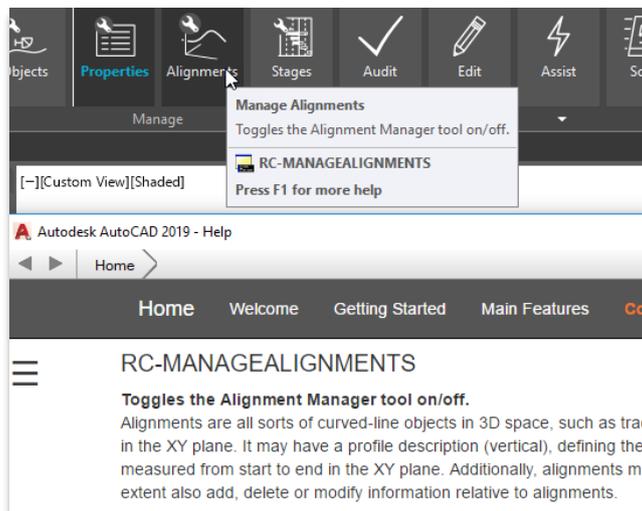
RailCOMPLETE exports data in an XML-format suitable for further analysis in capacity analysis tools.

## Easy to get started

Help and advice is always available in RailCOMPLETE. The integrated help system is context sensitive.

Tutorials and instruction videos are available. Tailored training will be provided upon your request.

To start your first RailCOMPLETE session, simply stop AutoCAD, run the install file, and restart AutoCAD again.



EMPOWERING RAILWAY ENGINEERS