# EDRMedeso Report Generator

Ansys Mechanical 2025 R1

Report Generator
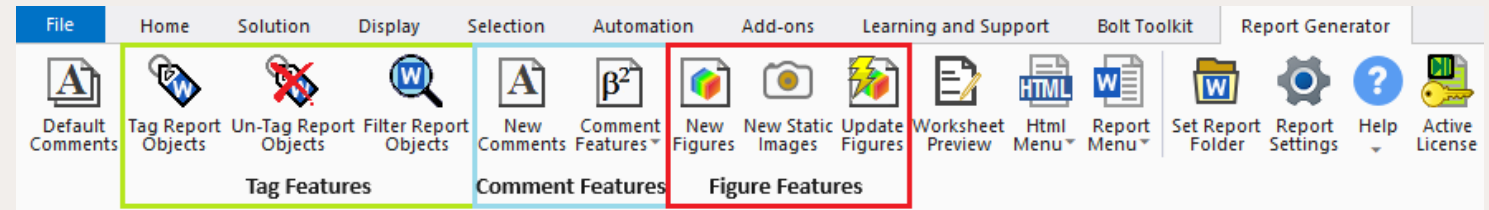
- **Main Features:**
  - Automation of report creation in Mechanical saved as Microsoft Word with full language support.
  - Update the report instantly to reflect e.g. new mesh, loads, results parameter tables etc.
  - Multi-object creation of Figures or conversion of Figures to static Images. Greek symbols and text formatting.
- **Business Value:**
  - Ansys unique integrated and tailored reporting. Easy to select and add report content.
  - Customer versions and translations can be created, Word template, layout features, naming of objects etc.
  - Report is a true image of the analysis, good for 3rd party review or to set up a similar model.
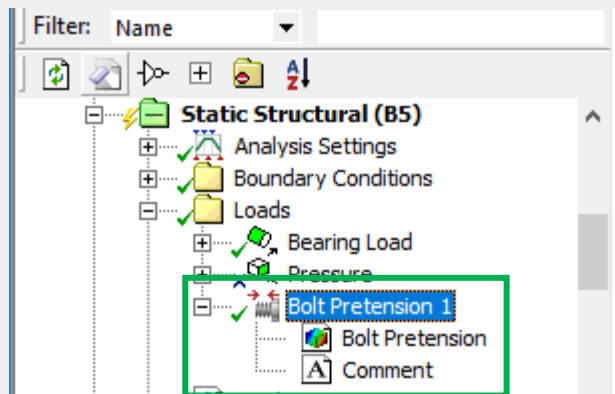
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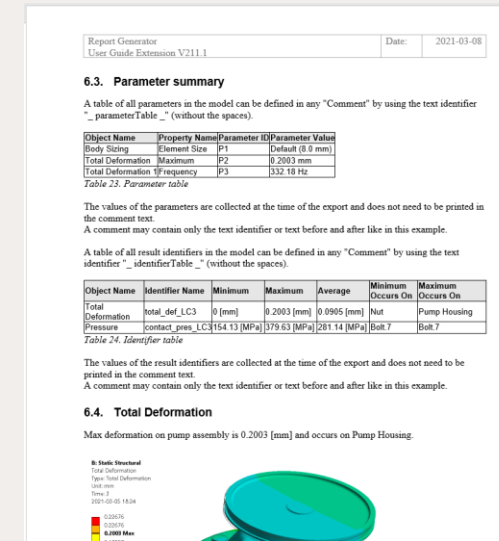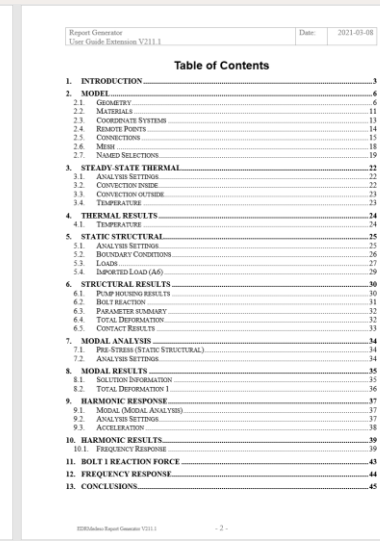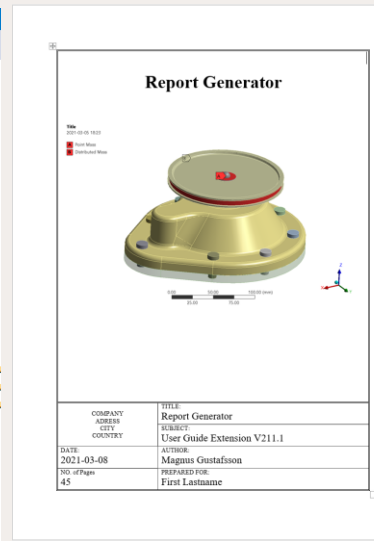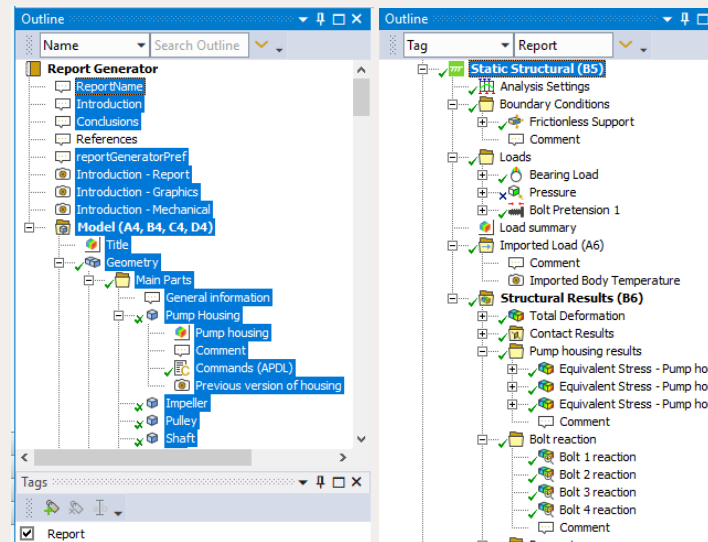
Report Process

- Traditional report writing starts when the analysis is done, and results are delivered. This way of working requires a lot of work to obtain all information and manage images tables etc.

- Report writing using the *Report Generator* starts at the same time as you prepare the model for solution. Report Generator is using native features in Mechanical when creating the report such as *Comments*, *Figures*, *Images, Tags* and *Groups*.

- The enhanced report process also lets you edit the report draft in Microsoft Word and then automatically sync the changes back to Mechanical.
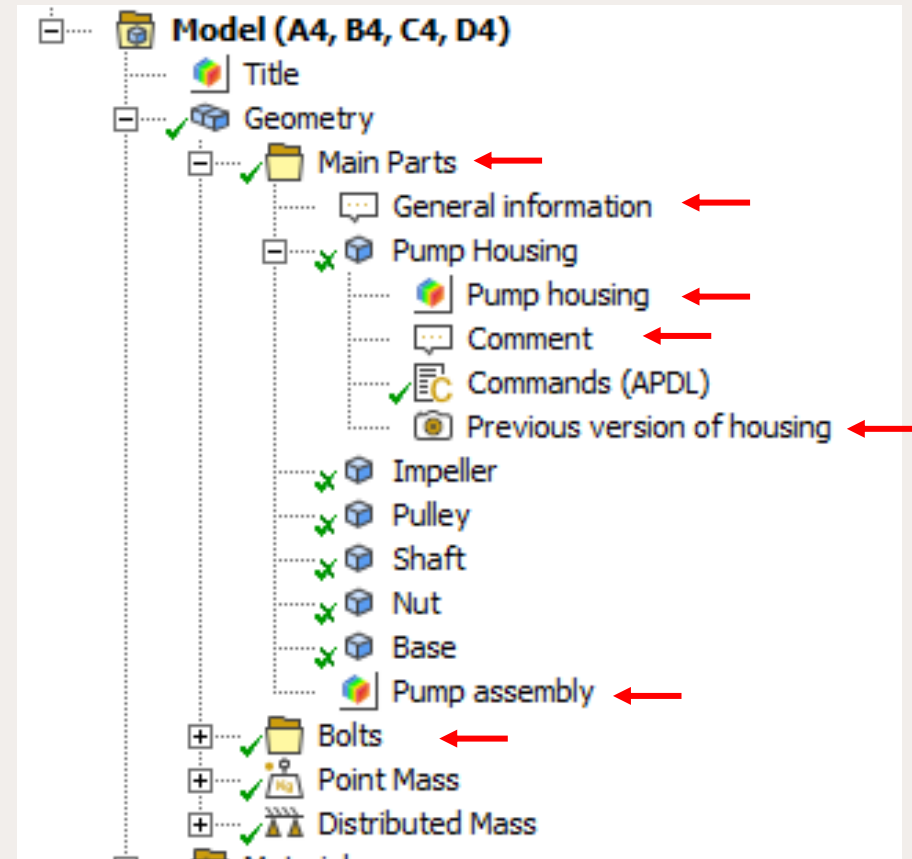
Add text comment

- Adding information about objects in the model tree using *Comments* makes it easy to understand why e.g. a load is used and where the value is coming from.

- The comment text is shown below the heading of the object it is created in.

- The text can be formatted and tables of data from e.g. Word can be pasted into the comment.
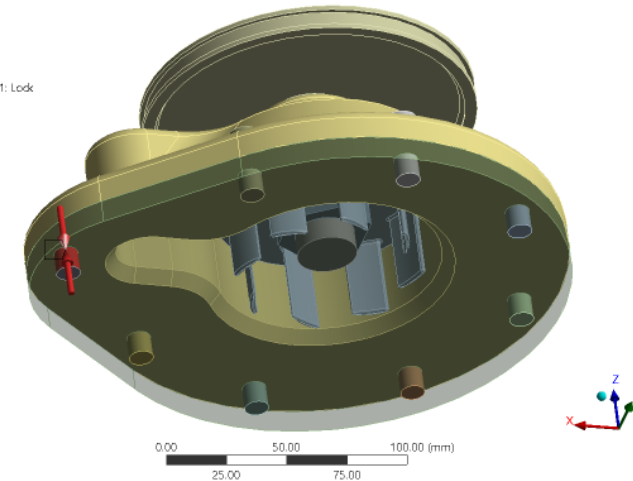
Format Comments, Erase Formats

- Custom formatting including subscript, superscript, strikethrough and Greek letters can be created using the button "Format Comments".

- All Html text formatting can be erased using the button "Erase Formats". This is useful if pasting in formatted text from Word or other editors.
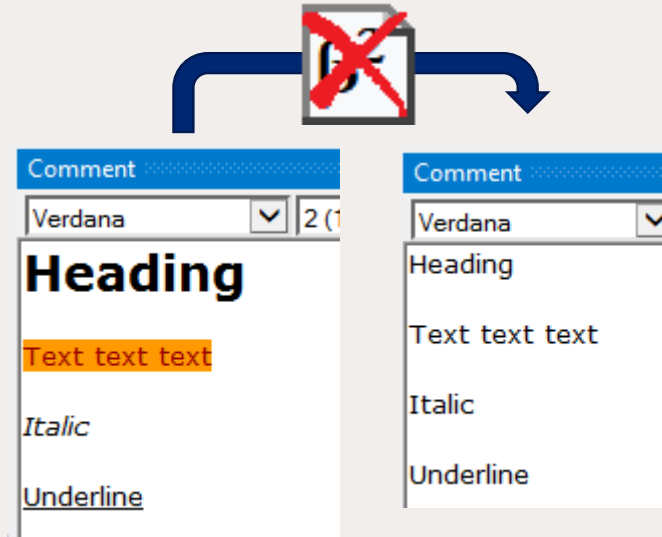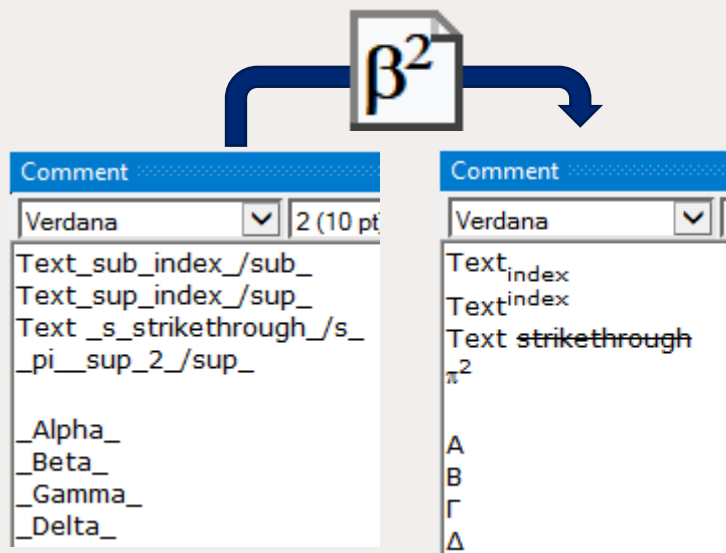
A : _Alpha_	α : _alpha_
B : _Beta_	β : _beta_
Γ : _Gamma_	γ : _gamma_
Δ : _Delta_	δ : _delta_
E : _Epsilon_	ε : _epsilon_
Z : _Zeta_	ζ : _zeta_
H : _Eta_	η : _eta_
Θ : _Theta_	θ : _theta_
I : _Iota_	ι : _iota_
K : _Kappa_	κ : _kappa_
Λ : _Lambda_	λ : _lambda_
M : _Mu_	μ : _mu_
N : _Nu_	ν : _nu_
Ξ : _Xi_	ξ : _xi_
O : _Omicron_	o : _omicron_
Π : _Pi_	π : _pi_
P : _Rho_	ρ : _rho_
Σ : _Sigma_	σ : _sigma_
T : _Tau_	τ : _tau_
Y : _Upsilon_	υ : _upsilon_
Φ : _Phi_	φ : _phi_
X : _Chi_	χ : _chi_
Ψ : _Psi_	ψ : _psi_
Ω : _Omega_	ω : _omega_

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Parameter Table

- A Parameter Table of all used parameters can be added in any text *Comment* anywhere in the model tree.

- Individual parameters may be used in the text as well, see next page.

Parameter values in comments

- Any parameter value can be referenced to in a text comment by using the parameter ID name.

- The object and property name is also available to insert.

- A results "identifier" name can also be used in text comments to print the "min", "max" or "average" value.

Add Figures and Images

- Add figures to objects, loads or results to include in the report. Set the view and contour for each figure independent. The figure name is used for the figure caption in the report.

- Figure export settings are defined in the "Graphics" and "Report" sections of Mechanical preferences, and this will make all *Figures* have the same size and quality independent of the Mechanical window size.

- Static *Images* of any kind can be added, e.g. to compare a result with a previous solution.
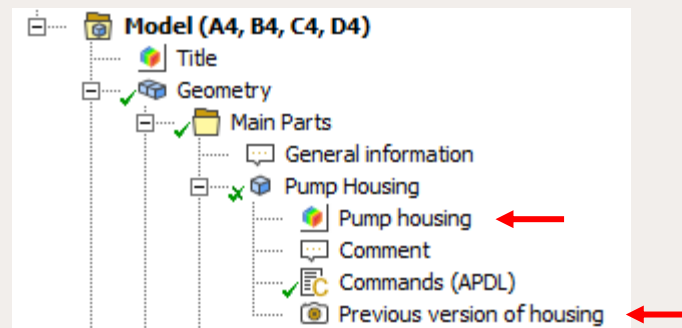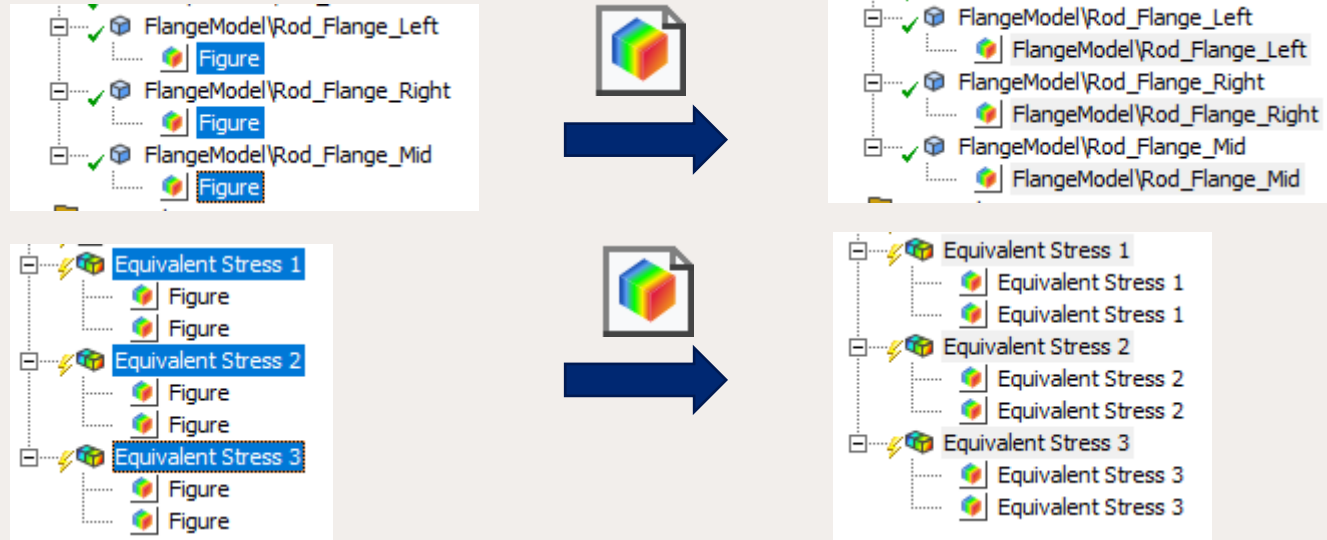
Figure Features

- Existing *Figures* and *Images* may be renamed based on the parent object name by selecting the objects in the tree and click "New Figures".

- It is also possible to select the parent objects to rename all corresponding *Figure* (or *Image*) childrens.

- This feature is useful if duplicating and renaming objects such as loads or results.

Disposition

The report main outline level can be defined in "Report Settings".
Grouping of objects may be used to define a disposition in the report with subheadings.
Create groups in the order you want the sections in the report, see example below.

Worksheet Preview

- The "Worksheet Preview" displays all details of an object including the result summary tables as it will look in the report in the "Worksheet" window.

- This feature is useful to look at the design values and different result items in the summary tables of a **bolt** or **weld** result or to see advanced formatting using text identifiers for parameters etc.

Comment Preview

A table of all result identifiers in the model can be defined in any "Comment" by using the text identifier "_ identifierTable _" (without the spaces).

Table 1. Identifier Table

Object Name	Identifier Name	Minimum	Maximum	Average	Minimum Occurs On	Maximum Occurs On
Total Deformation	total_def_LC3	0 [mm]	0.2003 [mm]	0.0909 [mm]	Base	Pump Housing
Pressure	contact_pres_LC3	154.13 [MPa]	379.64 [MPa]	281.14 [MPa]	Bolt.7	Bolt.7

The values of the result identifiers are collected at the time of the export and does not need to be printed in the comment text. A comment may contain only the text identifier or text before and after like in this example.

Geometry Worksheet

Comment

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A table of all result identifiers in the model can be defined in any "Comment" by using the text identifier "_ identifierTable _" (without the spaces).

identifierTable

The values of the result identifiers are collected at the time of the export and does not need to be printed in the comment text.
A comment may contain only the text identifier or text before and after like in this example.

Advanced (184) Uf_tension Preview

Table 1. Advanced (184) Uf_tension property list

Result Name		Advanced (184) Uf_tension	
Bolt Geometry			
Bolt Group	Advanced nut (184)		
Nominal Diameter, d	12.0 mm	Nominal Diameter Length	30.0 mm
Stress Diameter, d_s	12.0 mm		
Head Diameter, d_m	22.5 mm	Hole Diameter, d_0	14.0 mm
Bolt Evaluation			
Bolt Code	Eurocode 3	Bolt material class	8.8
Bolt yield strength, f_{yb}	640.0 MPa	Bolt ultimate strength, f_{ub}	800.0 MPa
Design bolt preload, $F_{p,Cd}$	57577.0 N	Applied Pretension Force, F_p	42865.0 N
Connection Category	E preloaded	Cut thread comply with EN 1090, k_{tv}	1.0 (Yes)
Plate ultimate strength, f_u	400.0 MPa	Plate thickness, t_p	20.0 mm
Safety factor, γ_{M2}	1.25		
Countersunk bolt	No	Countersunk bolt factor, k_2	0.9
Design tension resistance, $F_{t,Rd}$	65144.0 N	Design punching resistance, $B_{p,Rd}$	271434.0 N
Bolt Result Item	$Uf_{tension}$	Scale Factor Value, γ_L	1.0
Result averaging	Individual	Result Location	Mid
Definition By	Time	Display Time	5.0

Table 2. Advanced (184) Uf_tension Results summary

Bolt Id	F_n [kN]	F_v [kN]	M_b [Nm]	δ_{Adj} [mm]	P_{head} [MPa]	F_s [kN]	F_c [kN]
1	40.133	0.152	3.243	2.936e-01	164.7	0.314	35.594
2	40.140	0.122	2.602	2.938e-01	164.7	0.415	35.927

Table 3. Advanced (184) Uf_tension Results summary

Bolt Id	$F_{t.Ed}$ [kN]	$F_{v.Ed}$ [kN]	Uf_{max}	$Uf_{tension}$	Uf_{punch}
1	40.133	0.314	0.616	0.616	0.148
2	40.140	0.415	0.616	0.616	0.148

Geometry Worksheet

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Html Report

- The report can be exported as a html document.

- Bolt Toolkit and Weld Toolkit automatic html reports can also be created.
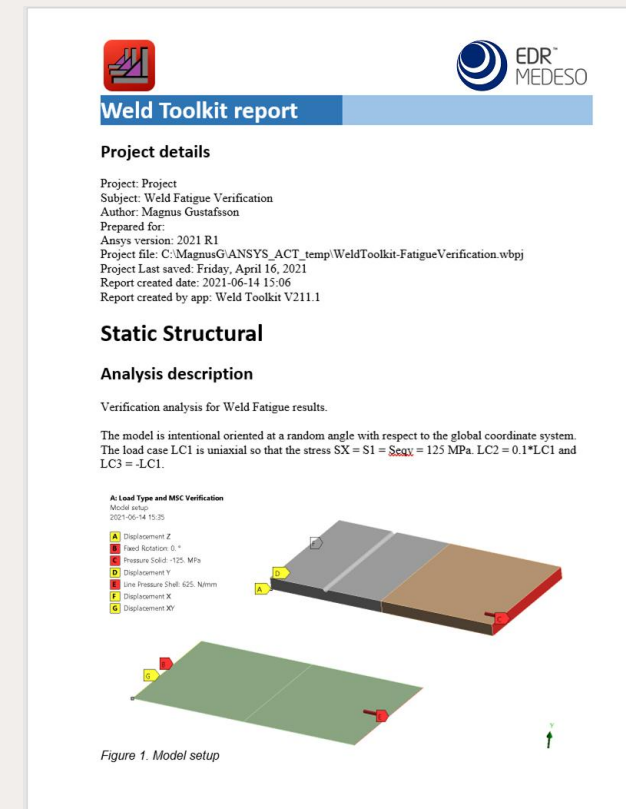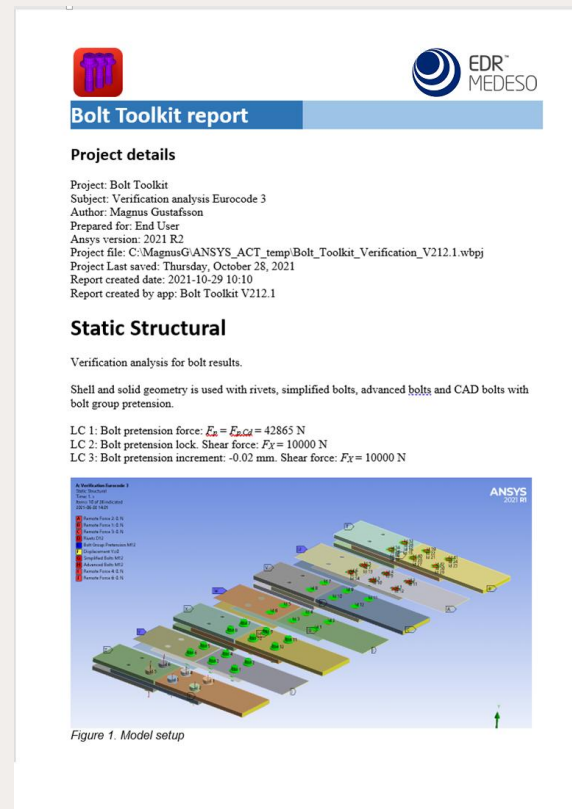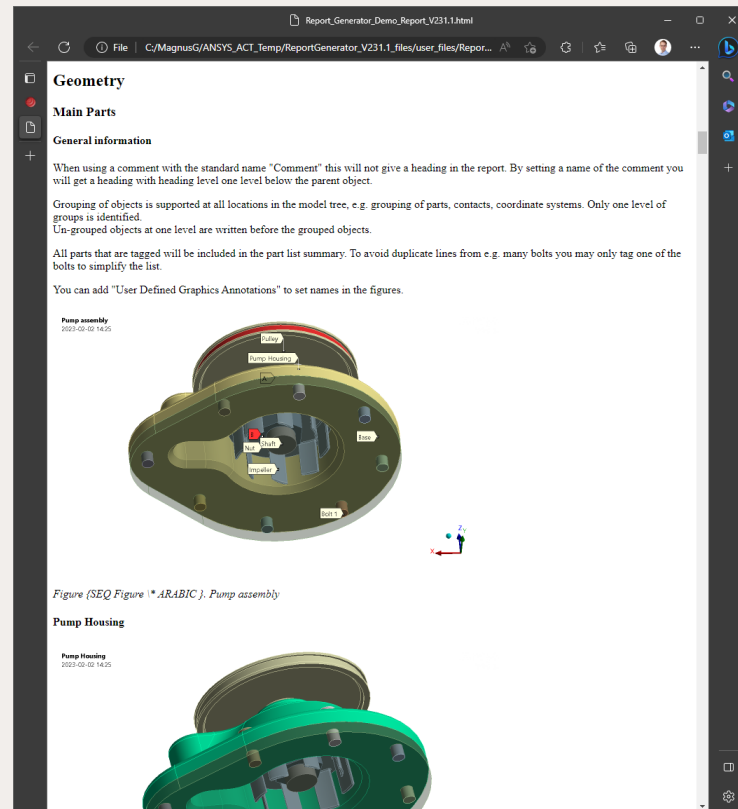
Edit Draft Report

- The report writing process is enhanced by the "Edit Draft Report" that lets you edit, add new text, check grammar and spelling in Microsoft Word.

- The changes are then automatically synced back to Mechanical using the "Refresh Model from Draft".

Refresh Model from Draft

- It is possible to open the html report draft from the projects "user_files" for "off-line" editing.

- Changes in the html report draft can be synced back to Mechanical and this allows for adding more content and export the report without loosing the previous updates.
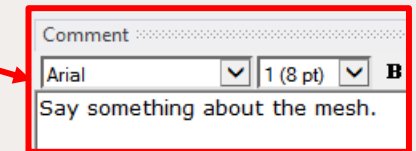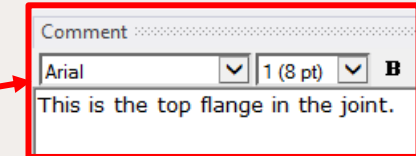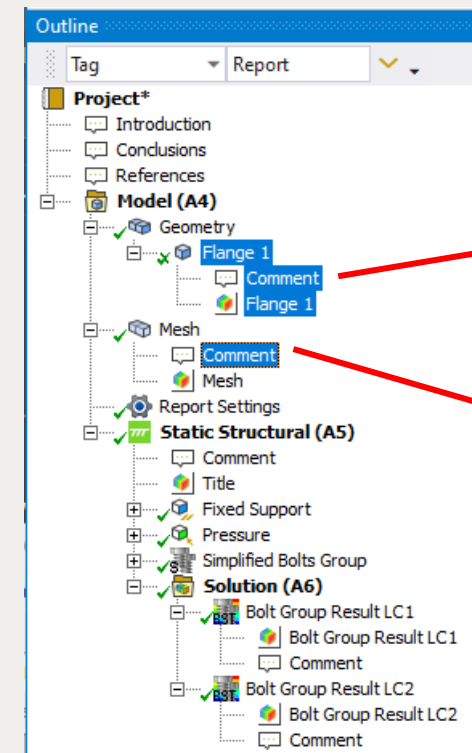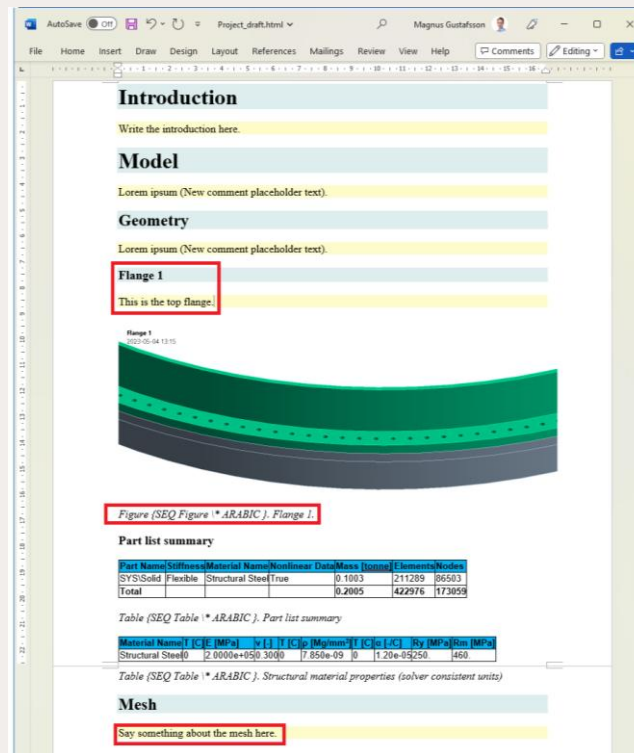
Create Report

- The report is exported and saved in your company Word template and can be further edited if needed.
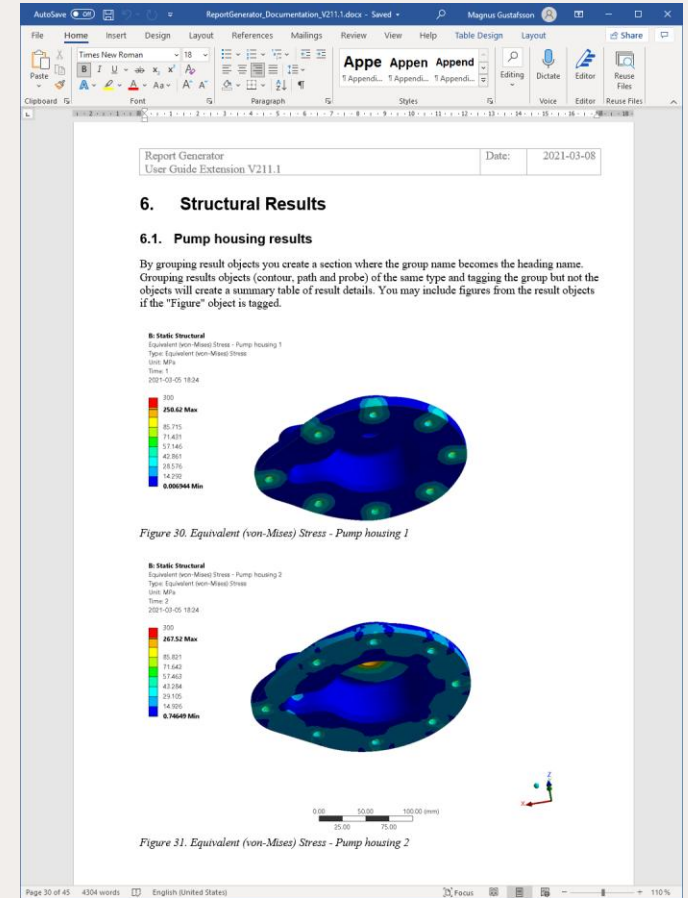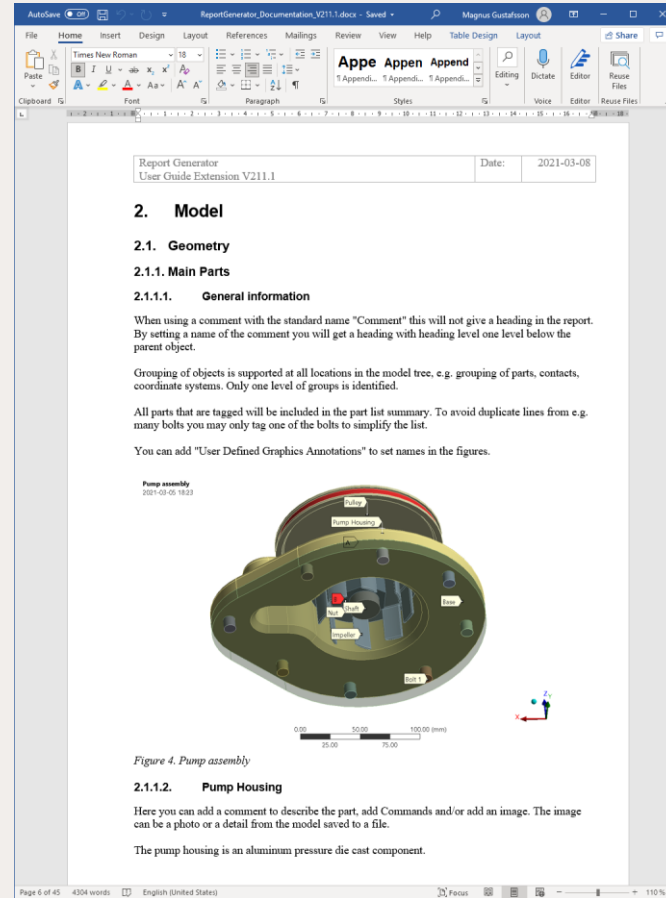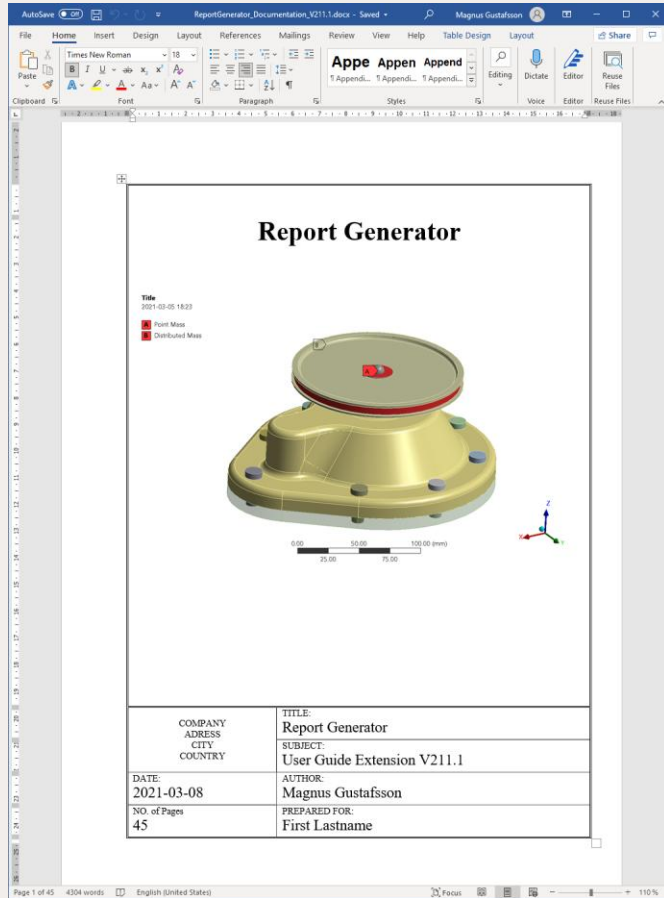
Batch Report

- The report can be exported in batch when solving a project on Windows.

- This is useful if running a design point study to compare result plots etc. without needing to retain all design points.

- Charts and Tabular data is currently not supported due to limitations in Ansys.
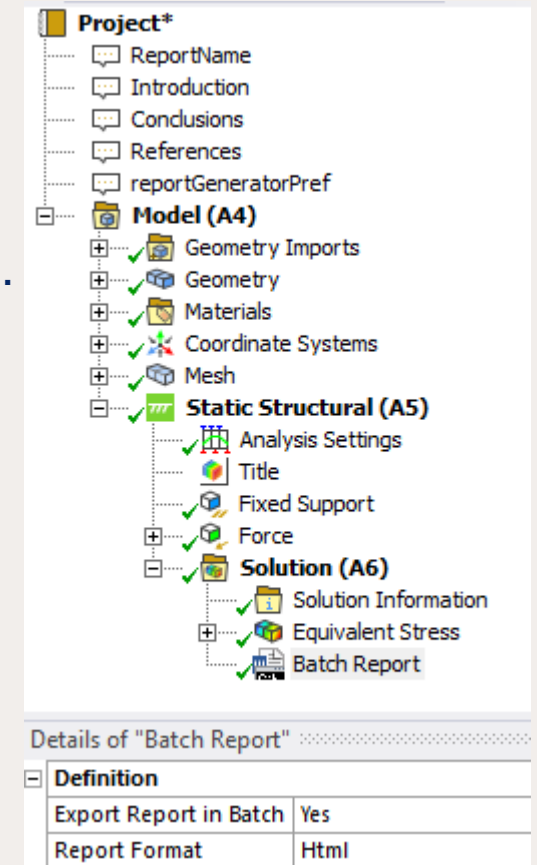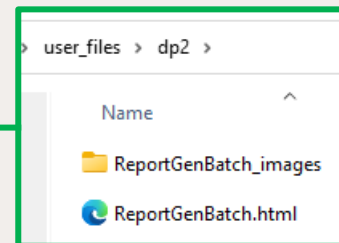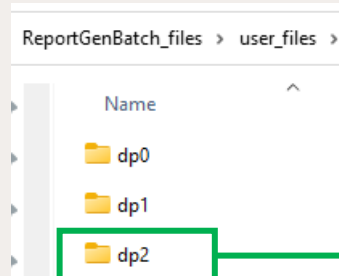
Report Settings

- The *Report Generator* has an easy to use "Report Settings" object to customize your report creation.

- Settings can be imported from previous versions.
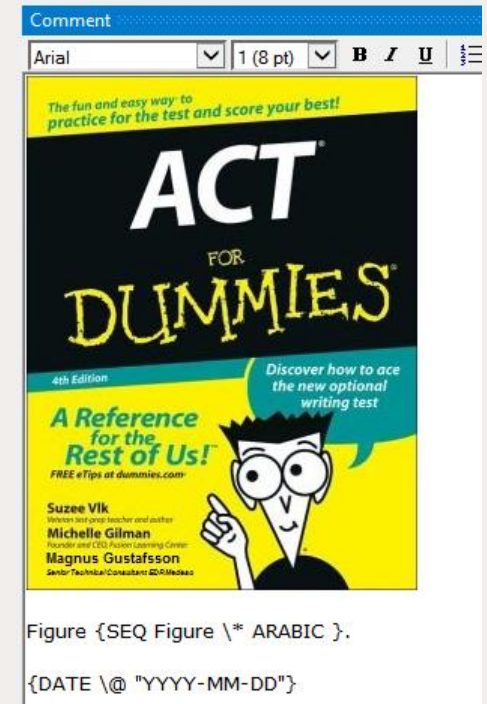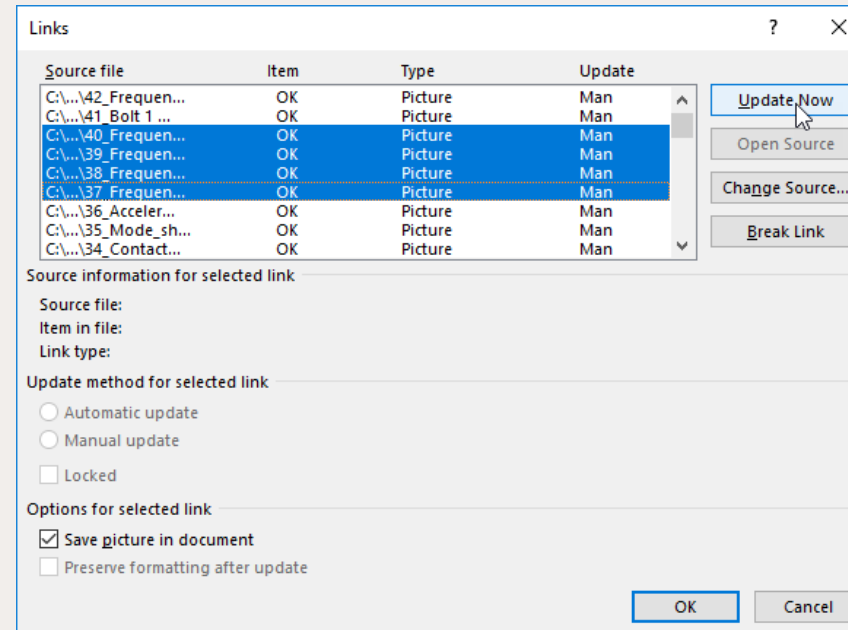
- Changes can be saved as new app default values.

Additional Features

- Update figures in Word

- Add appendices

- Select Word template to use

- Add Word fields

- Workbench language support

- Workbench journaling


```
system1 = GetSystem(Name="SYS 2")
model1 = system1.GetContainer(ComponentName="Model")
model1.Edit()
reportName = "'myReport.docx'"
commandText = "[i for i in ExtAPI.DataModel.Project.Comments if i.Name =='ReportName'][0].Text = " + reportName
model1.SendCommand(Language='Python', Command=commandText)
model1.SendCommand(Language='Python', Command='exportReport(None)', ExtensionName='Report Generator')
model1.Exit()
```

EDRMedeso licensing features

- Starting in 2025 the EDRMedeso apps uses a cloud license server connecting via internet HTTPS protocol (over the standard TCP port 443) to activate and check out/in the license.

- The cloud license server eliminates the need for running a local license server or to manage specific network/firewall settings. Any Windows PC (physical or virtual) can connect.

- When using an app feature in pre or post processing the app license is checked out and the "Active License" button turns green. You may release the app license from the current PC by clicking the "Active License" button that then turns grey indicating that the license is free.

- If the license is not available a warning message is displayed in Mechanical.

- The app license is installed using the "Install License File" and the license status and current users is listed using the "Check License Status".
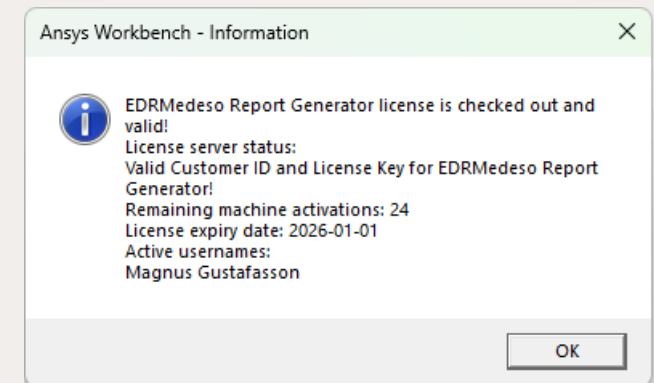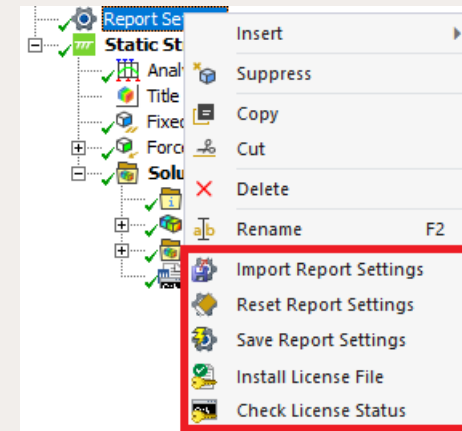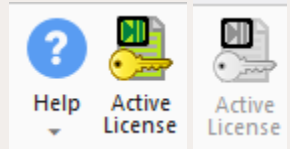
Thank You!

Magnus Gustafsson

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