

Easy 2021 Release Notes

December 2020
technet GmbH, Pestalozzistraße 8, 70563 Stuttgart, Germany



1 Installing

- Please note that installing Easy Release 2021 will not overwrite an older (2020, 2019, ...) existing installation of Easy. You can use Easy 2021 and an older release of Easy on the same computer.
- Easy Release 2021 requires a new password!

2 System Requirements

Operating systems:

- Windows 10 (current service pack) 64-bit
- Windows 8.1 (current service pack) 64-bit
- Windows 8 (current service pack) 64-bit
- Windows 7 (current service pack) 64-bit

Minimum Hardware:

- A graphic card with an OpenGL accelerator is strongly recommended.

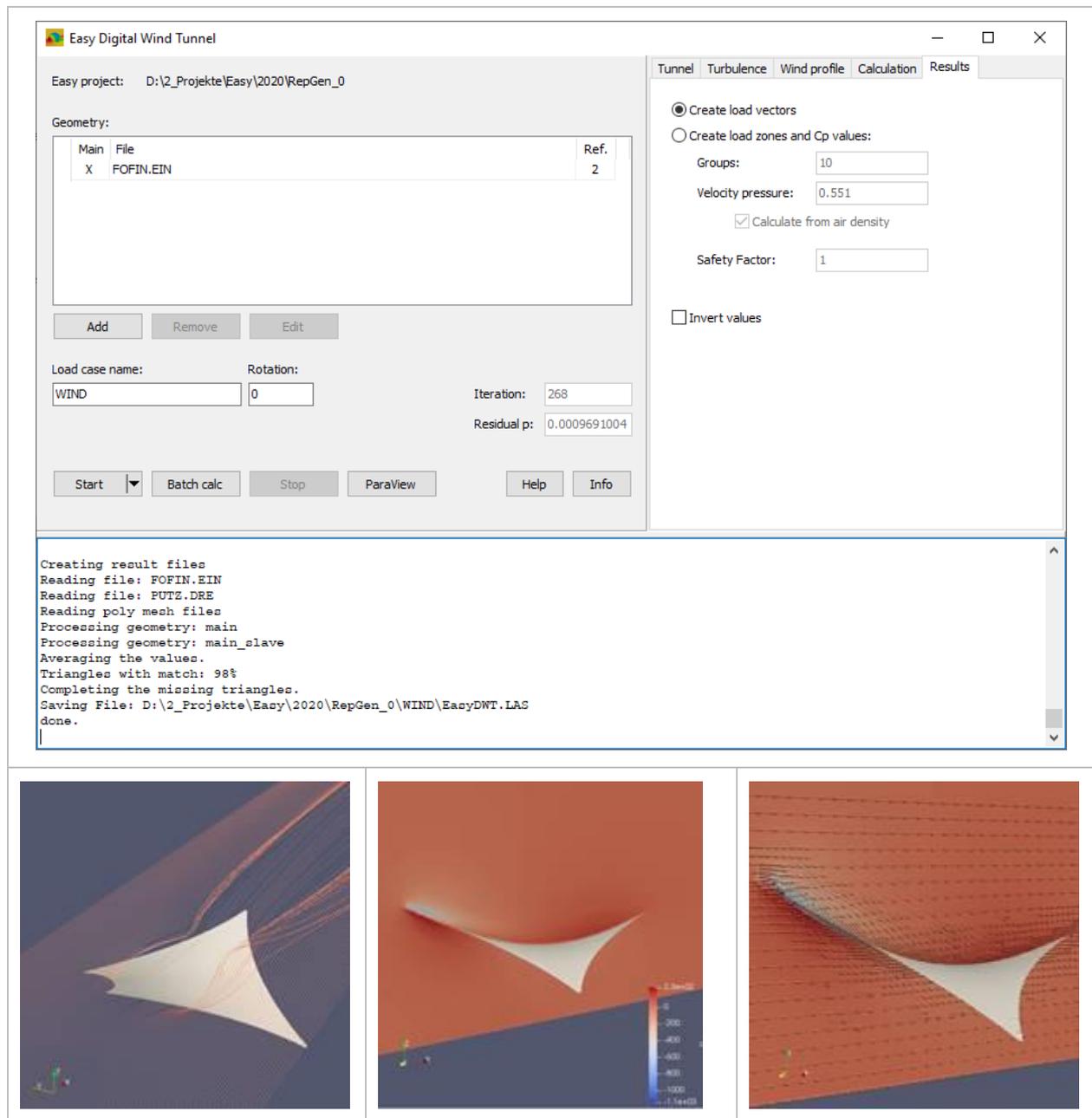
3 EasyDWT – Digital Wind Tunnel

EasyDWT is a tool for numerical simulation of wind flows in a digital wind tunnel. It is part of the EASY_S (Static) license. The program can be installed via a separate installation. Please also note the separate download link in our protected download area.

- Import of geometries using the file formats EIN and DRE
- One analyze geometry and any number of additional geometries for additional building parts and surroundings
- Rotation of geometry to analyze different wind directions
- Automatic sizing of the tunnel
- Turbulence models: k-epsilon, k-omega, k-omega SST
- Height dependent wind profiles
- Output of c_p values and load zones or load vectors
- Graphical analysis of the results with the tool ParaView

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The screenshot displays the 'Easy Digital Wind Tunnel' software interface. The main window is titled 'Easy Digital Wind Tunnel' and has a menu bar with 'Tunnel', 'Turbulence', 'Wind profile', 'Calculation', and 'Results'. The 'Results' tab is active, showing options for 'Create load vectors' (selected) and 'Create load zones and Cp values'. Parameters include 'Groups: 10', 'Velocity pressure: 0.551', 'Calculate from air density' (checked), and 'Safety Factor: 1'. There is also an 'Invert values' checkbox. Below these are 'Iteration: 268' and 'Residual p: 0.0009691004'. At the bottom of the main window are buttons for 'Start', 'Batch calc', 'Stop', 'ParaView', 'Help', and 'Info'. A log window at the bottom shows the following text:

```
Creating result files
Reading file: FOFIN.EIN
Reading file: PUTZ.DRE
Reading poly mesh files
Processing geometry: main
Processing geometry: main_slave
Averaging the values.
Triangles with match: 98%
Completing the missing triangles.
Saving File: D:\2_Projekte\Easy\2020\RepGen_0\WIND\EasyDWT.LAS
done.
```

Below the log window are three small images showing 3D visualizations of the wind tunnel geometry and flow field. The first image shows the geometry in a dark blue environment. The second image shows the flow field with a color scale from 0 to -1.7e+05. The third image shows the flow field with a color scale from 0 to -1.7e+05.

4 Report Generator RepGen

The report generator for static reports has been revised. In addition to adjustments regarding the beam editor and the preparation of the global reactions, the report generator has been extended by the representation of the external loads.

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3.2 Reactions global

Project analysis

P-ID trans	P-ID rot	Loadcase	RXL	RYL	RZL	MXL	MYL	MZL
40001133		LC3	-24.020933	24.020933	18.868211			
149900005		LC3	34.122835	-5.996428	-56.333711			
139900004		LC2	-0.748131	-27.153574	-44.068971			
40001133		LC3	-24.020933	24.020933	18.868211			
149900005		LC3	34.122835	-5.996428	-56.333711			
129900005		LC3	7.297230	-4.239672	64.185255			
270000000		LC1	-1.043806	-0.651611	47.710842			
	270000000					7.032599	-9.790213	0.000000
270000000		LC3	0.235503	-1.176144	24.364484			
	270000000					12.783764	3.828974	0.000000
270000000		LC2	-1.072021	-0.696193	50.727640			
	270000000					7.615945	-10.052229	0.000000
270000000		LC3	0.235503	-1.176144	24.364484			
	270000000					12.783764	3.828974	0.000000
270000000		LC3	0.235503	-1.176144	24.364484			
	270000000					12.783764	3.828974	0.000000
270000000		LC3	0.235503	-1.176144	24.364484			
	270000000					12.783764	3.828974	0.000000

4.1.1.1 Area loads

Loads

LC1: alles

Loadgroup	Type	Load	Factor	Sum X	Sum Y	Sum Z	Area
1	Wind	0.100000	1.000000	0.742000	-2.271900	20.898500	243.670000
1	Snow	0.200000	1.000000	0.000000	0.000000	-41.784800	243.670000
1	Selfweight	0.050000	1.000000	0.000000	0.000000	-12.183600	243.670000
2	Wind	0.100000	1.000000	-0.660800	2.276400	6.146700	67.530000
2	Snow	0.100000	1.000000	0.000000	0.000000	-6.145800	67.530000
2	Selfweight	0.020000	1.000000	0.000000	0.000000	-1.350600	67.530000

4.1.1.2 Line loads

Loads

Loadcase: alles

Loadgroup	Type	Load	Factor	Sum X	Sum Y	Sum Z	Length
1	Wind	0.100000	1.000000	4.161200	0.229200	-0.115700	64.870000
1	Snow	0.200000	1.000000	0.000000	0.000000	-12.942900	64.870000
1	Selfweight	0.040000	1.000000	0.000000	0.000000	-2.594900	64.870000
2	Wind	0.100000	1.000000	5.408500	-0.083300	0.144400	58.240000
2	Snow	0.100000	1.000000	0.000000	0.000000	-3.041100	58.240000
2	Selfweight	0.020000	1.000000	0.000000	0.000000	-1.164900	58.240000

4.1.1.4 Point loads

Loads

LC1: alles

P-ID trans	P-ID rot	ForceX	ForceY	ForceZ	MomentU	MomentV	MomentW	Factor
170000000		1.000000	0.000000	0.000000				1.000000
	170000000				0.000000	0.000000	2.000000	1.000000

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4.3.1.7 Automatic selfweight

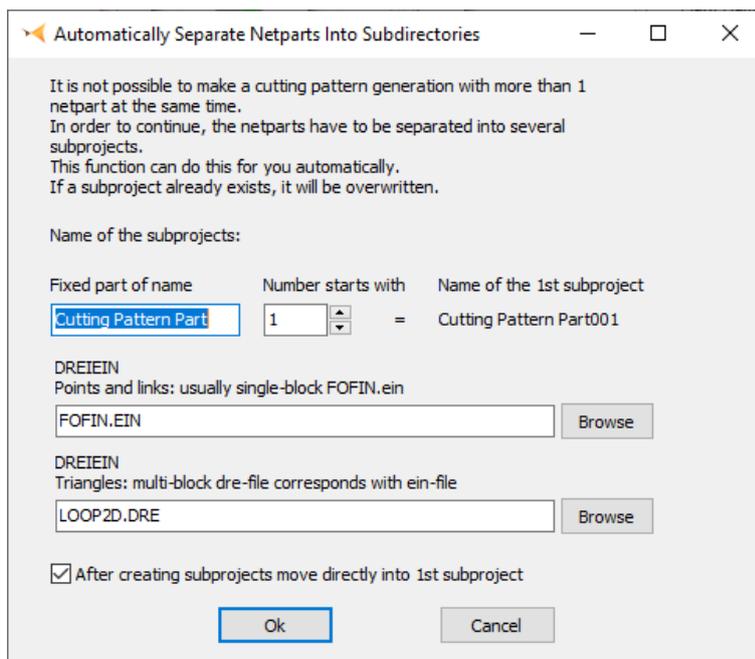
Loads

LC3: sw

Element type	No. of elements	Sum X	Sum Y	Sum Z	Length	Area
Beam	50	0.000000	0.000000	-0.440400	40.520000	
Strut	10	0.000000	0.000000	-0.932000	25.190000	
Cable	90	0.000000	0.000000	-3.013000	124.060000	
Membrane dir1	1342	0.000000	0.000000	-1.555300		311.770000
Membrane dir2	1301	0.000000	0.000000	-1.555900		311.920000

5 EasyShell

5.1 AutoSubP: ECK file is no longer needed:

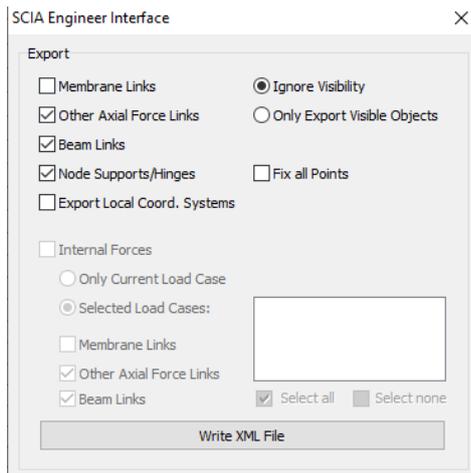


5.2 Bugfix

Wrong directories when batch jobs are executed in active load cases.

6 Beam Editor

6.1 In SCIA Interface internal forces can also be exported for membrane links:



6.2 Consideration of non-conservative area loads

6.3 Create new models

Optional ROL file for membrane sliding support

6.4 Change

Create beam links without pretension

Delete rotational points together with beam links

6.5 Bugfix

Change of cross-sections for multi-selection of links.

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7 Easy Tailor´

7.1 Bugfix

DXF-Export: Strips are exported as 2d polylines instead of 3d polylines

7.2 Bugfix

Error when creating corner points (column E in stord.inp)

7.3 “Precalculation” was revised

Additional points/links can now be added independently. The compensation is preserved:

Line Selection | Cloth Selection | Point Selection | View Options | Precalculation

☑ STord parameters

Spacing

Point distance:

Compensation in x

Mode:

Compensation: %

Compensation in y

Mode:

Compensation: %

Additional widths

Outer boundaries:

Seam lines:

☑ Additional points/links

EIN file: ...

Projection:

Projection direction X:

Y:

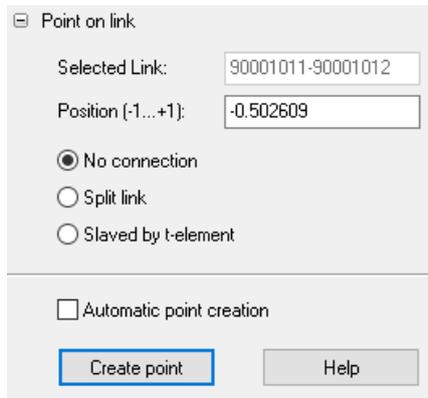
Z:

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8 GED

8.1 Add point: New options:

- Split link at new point
- Slave new point by t-element
- Immediate creation of the point by mouse click



Point on link

Selected Link: 90001011-90001012

Position (-1...+1): -0.502609

No connection

Split link

Slaved by t-element

Automatic point creation

Create point Help

8.2 Add link: New options:

- Immediate creation of link after clicking on the ending point
- Creation of continuous links (ending point of first link is starting point of second link)



Automatic link creation

Continuous links

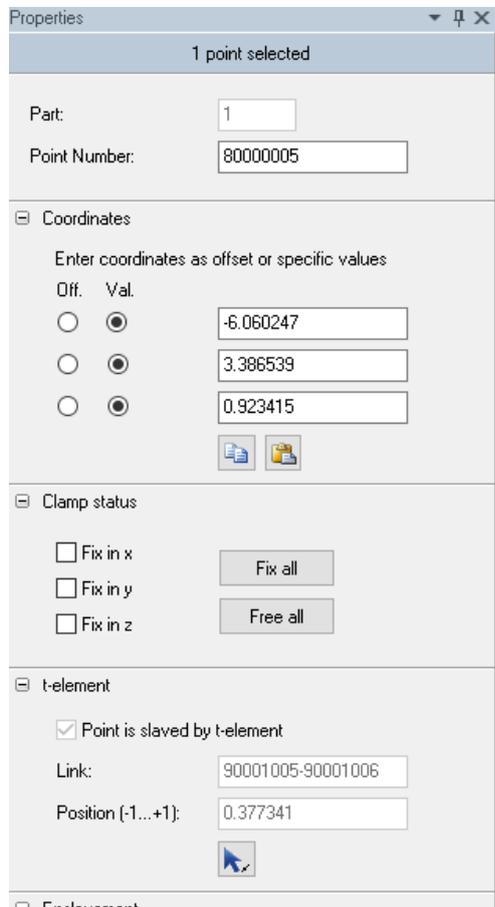
Create link Help

8.3 Point properties: Information about t-element is displayed.

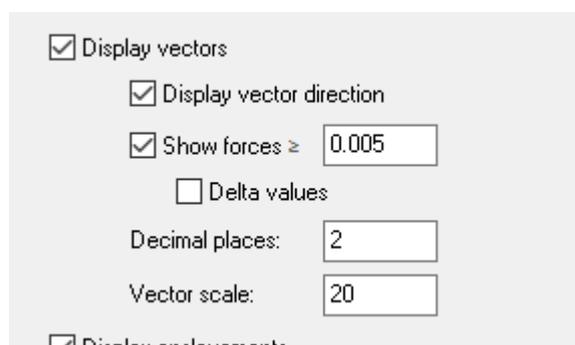
The position of the enslaved point can be changed by mouse click:

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8.4 View Options: Settable decimal places for vector labeling:



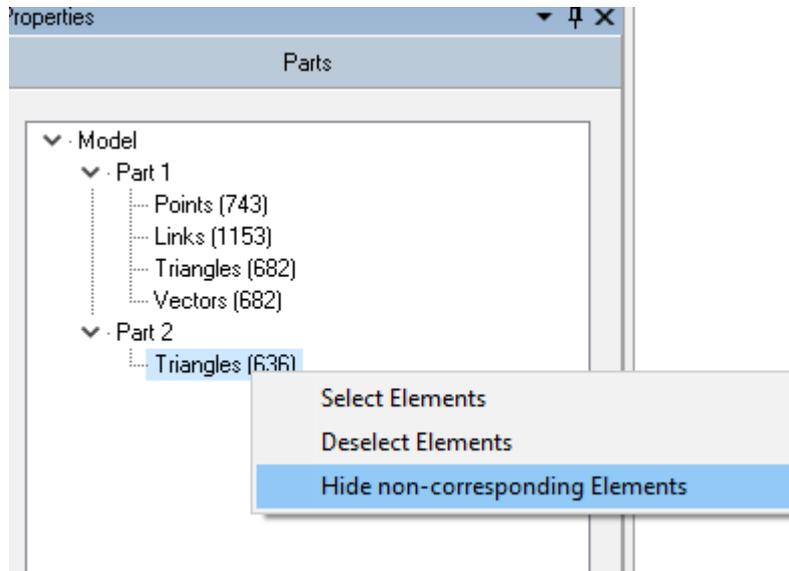
8.5 Edit/Part: New context menu item „Hide non-corresponding Elements”

All objects that do not exclusively use the triangle points of this part are hidden.

Helpful for the combination single-EIN/multi-DRE file if you only want to edit points/links of a triangle group. Everything is shown again via "View/Show All Elements" menu item in the main menu.

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8.6 Separate triangles by slope

Angles more than 90 degrees.

8.7 Weather

Export of coordinates in an EIN file.

8.8 Bugfix

Error with concurrent options: "SnapToPoints" and "UseCustomSelectionDialog"

9 Strip

9.1 Change

Links attributes of exported geodesic lines in EIN file