

# PULSIMSUITE NEWSLETTER

This is the PulsimSuite newsletter of Q3, 2018, presenting version 2.2.3 that was released in August 2018. We give you the latest developments in our API 618/674 pulsation & vibration software toolbox. Always eager to boost efficiency in the PulsimSuite work flow, we have used our clients' feedback for the enhancements in this new version.

Run cases

Id	Name	Max [-]	Nr Steps	Filter Start	Filter End	MaxDx [mm]
1	100%	20	151	16	32	50
2	50%	20	151	16	32	50
3	reverseflow	20	151	32	48	50

Pulsation run filter settings

MRA cases

Id	Name	ADS Skip [kN]	ADS Take [kN]	ADS MinDev	ADS MaxDev
1	mra1	0.25	0.75	0	10
2	mra2	0.25	0.75	0	10

Mechanical run "ADS" settings

Load cases

Id	Name	Crankshaft	RPM [rpm]	Rotating	CY Name	Eff. [-]
1	100%	PVCcompressor	480			1
2	50%	PVCcompressor	480			1
3	25%	PVCcompressor	480			1

Context menu options: Insert, Delete, Copy row, Copy values to column



## Introducing version 2.2.3:

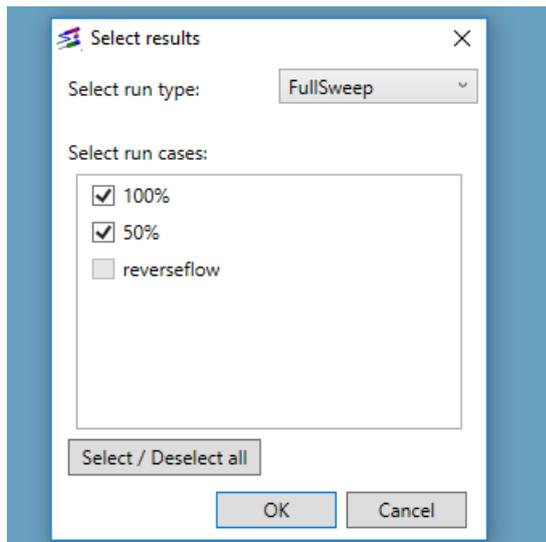
The main improvements in this release are the additional options in the acoustic and mechanical run case definition. Instead of previously having to edit dedicated text files, you can now define in the run case properties what acoustic filter must be used in the pulsation results post-processing, and what force threshold settings are to be used for searching the worst-case pulsation-induced forces for a Mechanical Response run.

This makes the existing functionalities clearer, and easier to use. It helps you saving time by reducing the amount of mechanical runs when needed.

In all "bottom tab" windows that specify operating conditions, load cases, etc., you can now copy a full row, or copy a value from one of the boxes into all rows in that column. These functions can be found under the right-mouse button.

An efficiency improvement is also the new refresh button in the menu bar. This is useful to reload results after a rerun with a model, without having to switch to "default" coloring first.

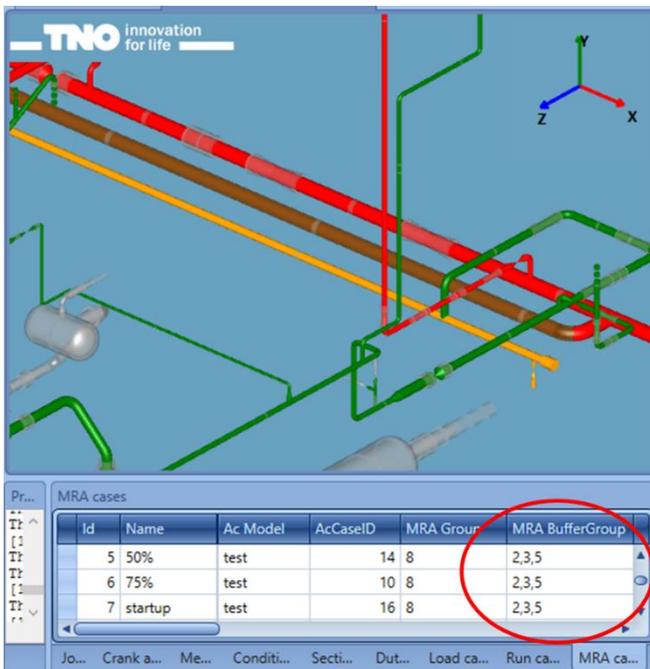
Changing the coloring of the 3D canvas (default, group, pulsation results, etc.) is now also faster: just press ALT+C on your keyboard (this opens the "coloring selector") and then the first letter of your selection.



Loading the results will now first show a selector menu where you can choose which of the run case results you want to see. It also clearly shows you for which of the run cases results are available, and for which cases they are not.

This will prevent the situation that you think you have loaded results for all run cases, while some cases were not simulated yet.

Moreover, when selecting a specific result type (pressure\_pkpk, API\_ratio, etc.), a message will pop up if any of the previously selected "cases" does not contain that specific result.

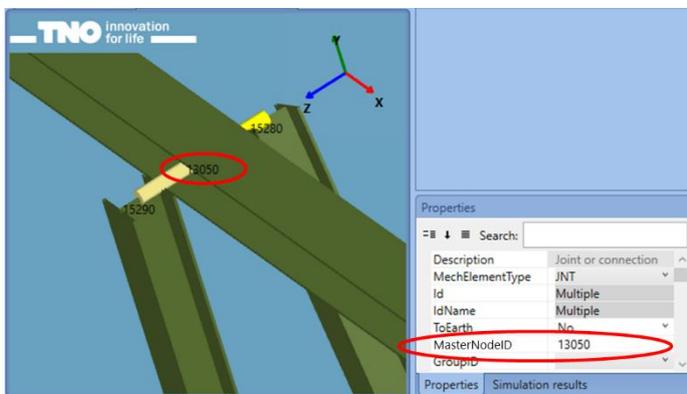


To reduce the calculation time of mechanical responses (by disregarding parts of a system in the mechanical runs), PulsimSuite 2.2 introduced the "MRA group".

In version 2.2.3 a new item in the MRA cases window is "MRA Buffer Group". Multiple buffer groups can be used to specify parts of a system as mechanical boundaries for the mechanical (ANSYS) model. These parts will be included in the ANSYS model, but vibrations and cyclic stresses will not be calculated there (the result values will be zero).

Dividing the mechanical model into several sub-models improves calculation speed in two ways:

- ANSYS calculation speed increases strongly with decreasing model size.
- Acoustic excitation forces are only searched from results on pipes in the area of the selected MRA Group(s), resulting in a smaller amount of mechanical runs.



Joints (JNT) now have a master (and implicitly a slave) node definition: the MasterNodeID property. You can thus create e.g. several hinge connections to one structural location. Several JNT's can be connected to one Mechanical node, if that Mechanical node is specified as MasterNodeID.

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