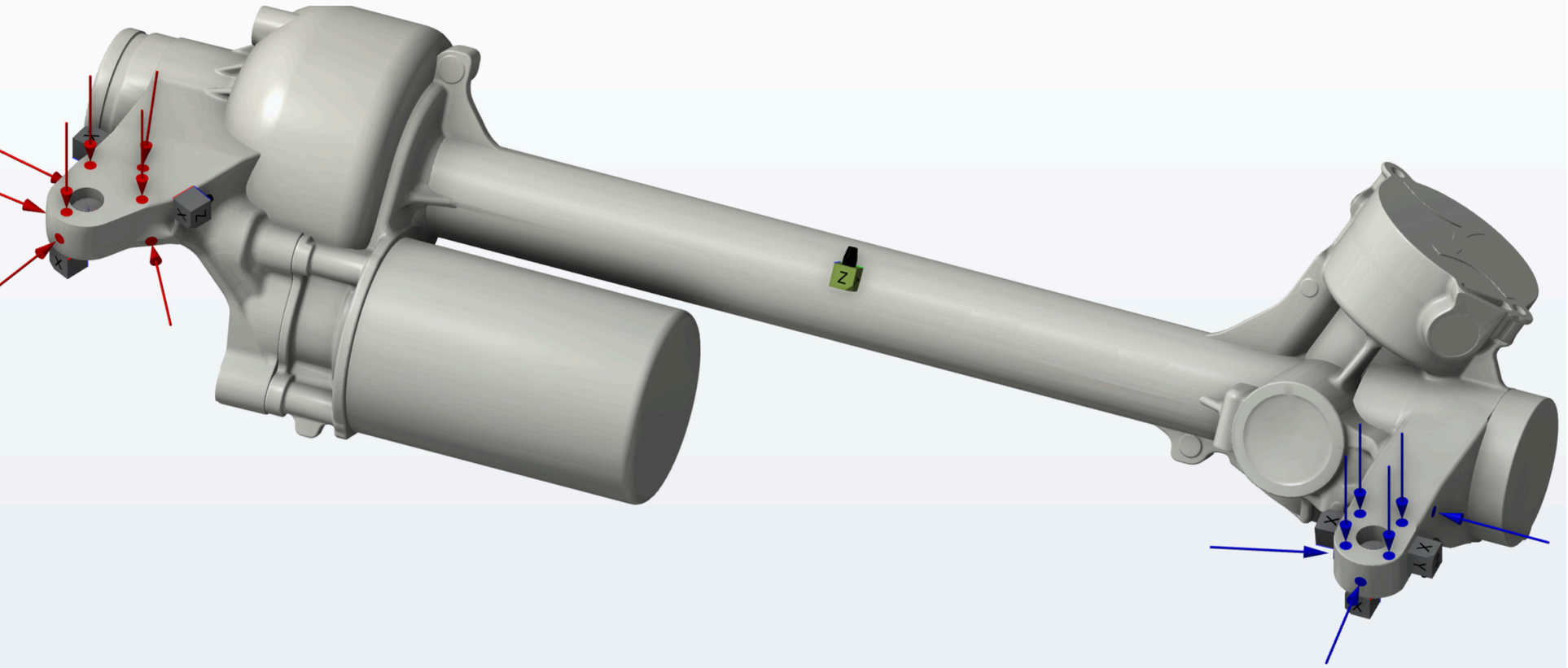


VIBES.technology
engineering good vibrations

SOURCE CHARACTERIZATION

Describe the source once, reuse forever

INDEPENDENT DESCRIPTIONS OF **ACTIVE SOURCES**

Source characterization allows for creating independent descriptions of active vibration sources, such as blocked forces or blocked volume accelerations, which are independent of the receiving structure or environment. You can use these precise inputs to enhance CAE simulations, facilitate competitor benchmarking, and enable modular development by virtually transferring measurements from a test bench to the actual product.

VIBES has spearheaded industrialization of Blocked Force technology by providing the most user-friendly software solution to obtain the highest quality of source descriptions.

“We can reuse the same source description across several OEM platforms without redoing the measurements.”

- VIBES customer, NVH manager at a German supplier -

COMMON CHALLENGES

How to characterize a source independent of its test setup?

A source measured on a test bench absorbs some influence from that setup, making results hard to reuse elsewhere. Blocked Forces, when obtained right, are independent of any receiver structure. The basic principles are outlined in ISO 20270:2019.

How to obtain blocked forces that are truly reliable and independent?

To obtain blocked forces that are truly receiver independent, VIBES offers the unique X-DoF technology. It mitigates common challenges in the In-Situ method and gives robust and independent blocked forces, every single time.

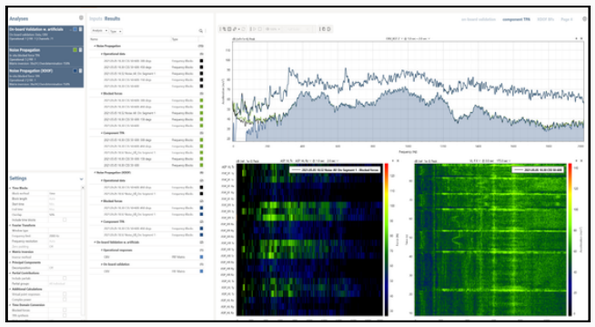
How to predict a source's behavior in the product before physical prototyping?

Blocked forces can be used in Component TPA workflows to predict that outcome before physical integration. You may prefer to simulate and listen to responses in SOURCE, or export to open formats for further processing in your CAE toolchain.

How to know if a design change is effective?

Blocked forces are telling a story about just the source. Through COUPLE and SOURCE, VIBES offers a wide range of Dynamic Substructuring and TPA solutions, allowing you to simulate interactions between sources and receivers and find out what matters most in your design.

THE WORKFLOWS

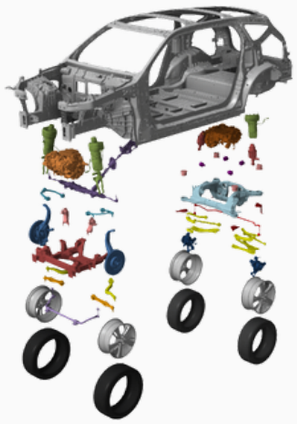


BLOCKED FORCE & ACOUSTIC* SOURCE CHARACTERIZATION

Blocked force source characterization describes an active vibration source by the forces it would exert on a perfectly rigid structure. These forces belong to the source alone, so they stay the same whether the source is mounted on a test bench or in the final vehicle.

The forces are calculated from measurements with X-DoF, VIBES' patented algorithm. Conventional tools need manual tuning for this step, so results depend on the engineer. X-DoF selects the right degrees of freedom automatically, so every engineer gets the same forces from the same data, ready to reuse in simulations and to benchmark across products, teams and organizations.

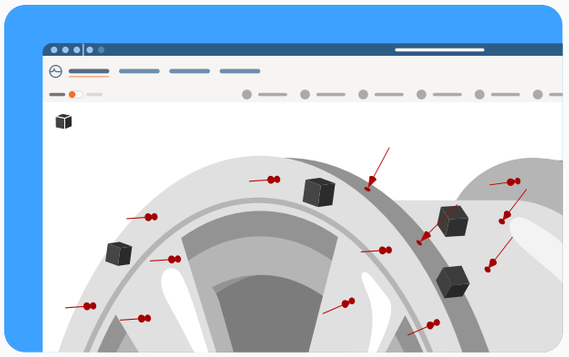
*Acoustic source characterization works the same way for airborne noise, describing the sound a source radiates independently of the room (e.g. an anechoic chamber) or product around it.



TARGET CASCADING

Target cascading breaks down a full-vehicle NVH target into objective, receiver-independent blocked-force targets for each component. Since these targets don't depend on the receiver structure, suppliers can verify compliance on their own test bench before delivery, catching risk early instead of discovering a failure once the part is already in the vehicle.

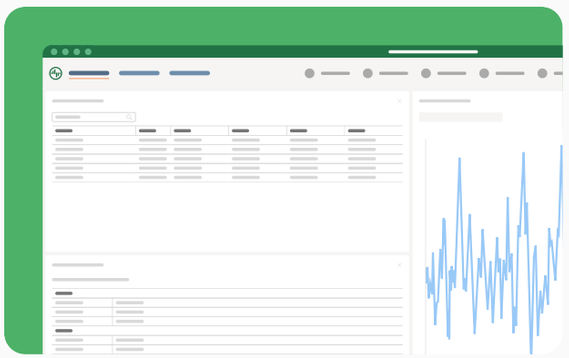
INSIDE THE SOLUTIONS



DIRAC

MEASURE

DIRAC is VIBES user-friendly FRF testing software with Virtual Point Transformation technology. It enables engineers to measure FRFs of components and full-vehicles and to use the resulting models in many different configurations or for Blocked Force calculations.

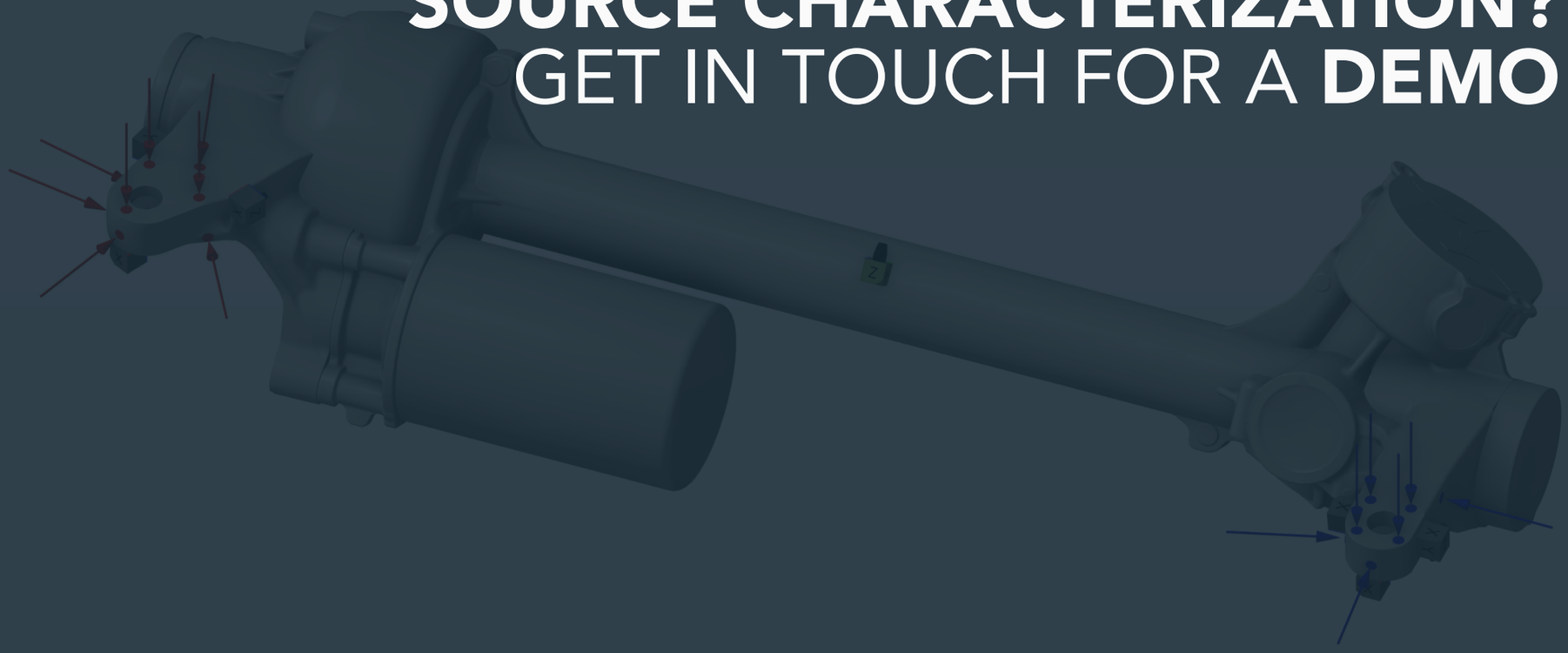


SOURCE

CHARACTERIZE

SOURCE is a dedicated software application for Blocked Force source characterization and component TPA. It generates high-quality and traceable calculations, an intuitive workflow and multi-leveled quality checks.

EXCITED ABOUT **SOURCE CHARACTERIZATION?** GET IN TOUCH FOR A **DEMO**



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