

Source Path identification

Transfer Path Analysis (TPA) is a technique used to break down a noise or vibration problem into its key contributors. These contributors are identified using source loads and transfer functions to the response at a target location.

To understand the response at the target, the following are used:

- Source: Characterized by forces, the source creates the input loads into the system.
- Transfer: Transfer functions (Frequency Response Functions) characterize how noise and vibration is transferred from the source to the target location.
- Target: Location where an unwanted vibration or noise is perceived. The examples in this article use sound pressure at a target location, but the technique is equally applicable to vibration.

Transfer Path Analysis can be used with physical measurements, simulation data, or a combination of the two.

ADL Alpharetta works actively with both Siemens and HBM for solving its N&V challenges. Source Path analysis typically involves taking measurements in operating and static conditions equally. This requires us to tear down the system into its constituent parts. An example tear down was performed on two commercial blenders-Vitamix and Spectrum

Useful link: <https://community.sw.siemens.com/s/article/an-introduction-to-transfer-path-analysis>

