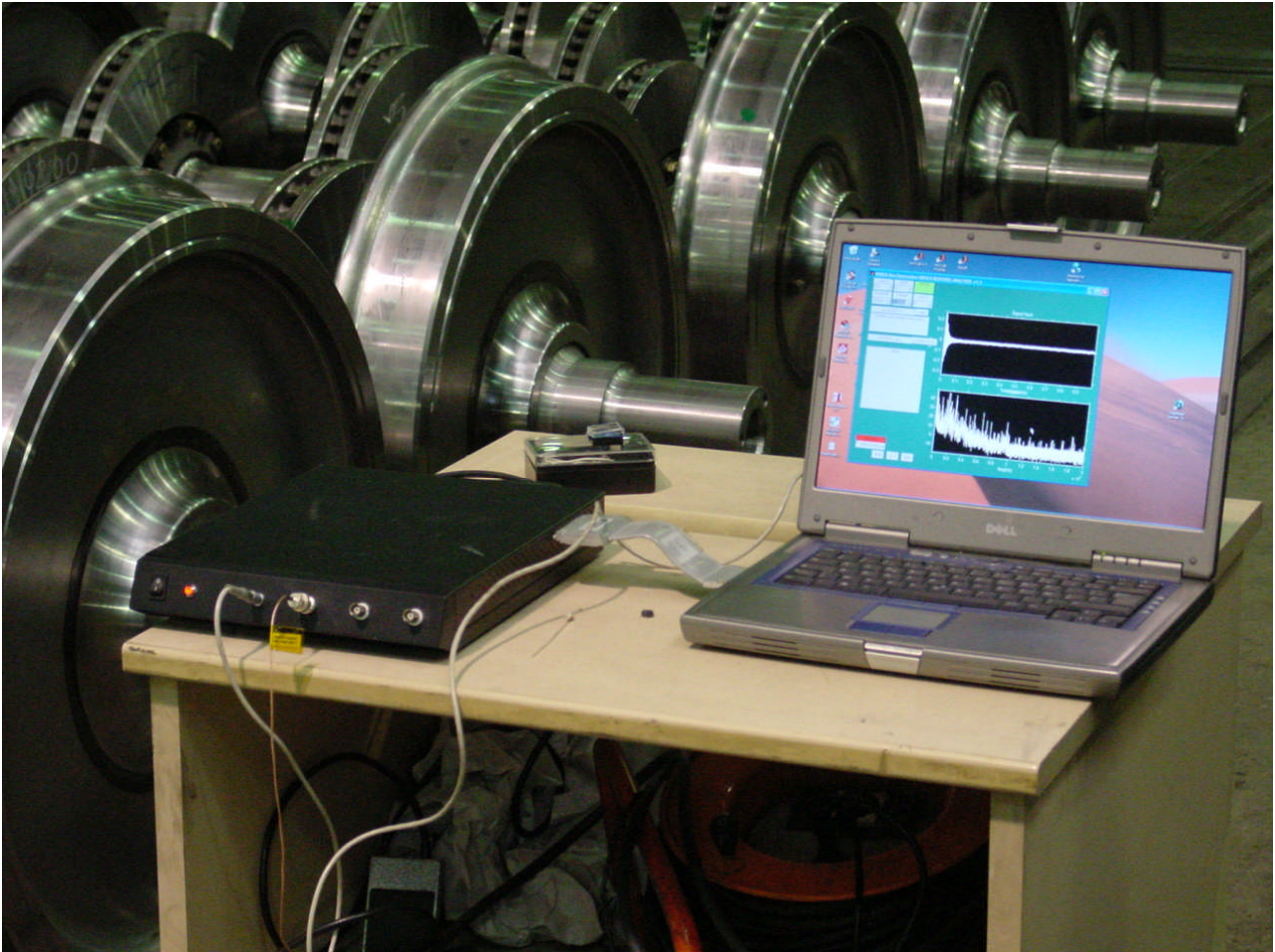


### APT\_ARTEMIS100



#### THE PRINCIPLE

There is a correlation between the vibration spectra of parts made by a controlled process. These spectra depend on the product's dimensions and material properties. By measuring and comparing these spectra, we are able to separate defective products from good products.

With a simple and single impact, we give an excitation to the product that needs inspection.

The whole body receives the excitation and starts to vibrate in return. The returned vibration spectrum is measured up to 150 kHz (if necessary). A number of peaks (this can be over 200 peaks) are automatically selected and are analysed with the Artemis100 software.

Analysis of these peaks is done with a customised combination of statistical criteria such as Percentage of Common Peaks (PCP), Least Square Coefficient (LSQ) and Spectral Cross Correlation (SCC)...

#### Contact

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Based on a number of selected criteria, good items are distinguished from defective items by comparing the measurement spectra and analysis results with a database, containing reference values. As not only defects but also temperature variations and size variations influence the vibration response spectrum, our software is able to compensate for these effects

## THE TECHNOLOGY

The impact excitation to the whole body is given by a miniscule hammer. High frequency vibration response is measured by an in-house developed sensor. Unlike a microphone this sensor is not sensible for environmental noise and is able to measure vibration spectra over 150 kHz (with a flat response). This technology makes the inspection fast and inexpensive.

Commonly used techniques have classical limitations with regard to the detection of small defects (as normal process variations mask the smallest defects). With the in-house developed powerful software, we are able to differentiate effects caused by process variations from real defects. In most cases, we achieve 100% defect detection in a matter of seconds.

## PRODUCT & SERVICES

Artemis100 comes in two versions: the classic Artemis100 (1) which can be installed in a production line and accepts or rejects the inspected parts and the handheld artemis100 (2) which can be used on site to inspect several products on different places. In order to find all defects we have to calibrate and validate our software and hardware on site with a few typical defected products and a few good products. Defective products can be identified by other NDT techniques or by failure in operation. Our team of engineers provides the calibration, validation and develops the software for specific requirements. Optionally, a life time service and assistance programme is provided.

## INDUSTRIES SERVED

- **Automotive:** engine parts (pistons, rods, bearing caps, pumps...), brakes (disks, drums, anchors, knuckles, callipers...), gears shafts, pressure plates, cases, brackets, steering links, steering racks, wheels...
- **Railway:** axles, wheels, brakes, cases, shafts, ball joints...
- **Marine/Offshore:** axles, large shafts, pumps, flanges, engine parts, parts performing in extreme weather conditions, spindles, gears...
- **Aviation/Space:** turbine blades, cylinders
- **Military:** artillery cases, bullet protection...