Inline System „Dynamic Sensor Test“ for ICM (Integrated Chassis Management)

The assembly has the function of the Electronic Stability Program in motor vehicles. ICM collects and processes all important items of information for driving dynamics and decides which control actions are needed from which subsystem in the current driving situation.

In the test station the DUT is submitted to a dynamic sensor test.

This covers the functional test of 3 sensors:

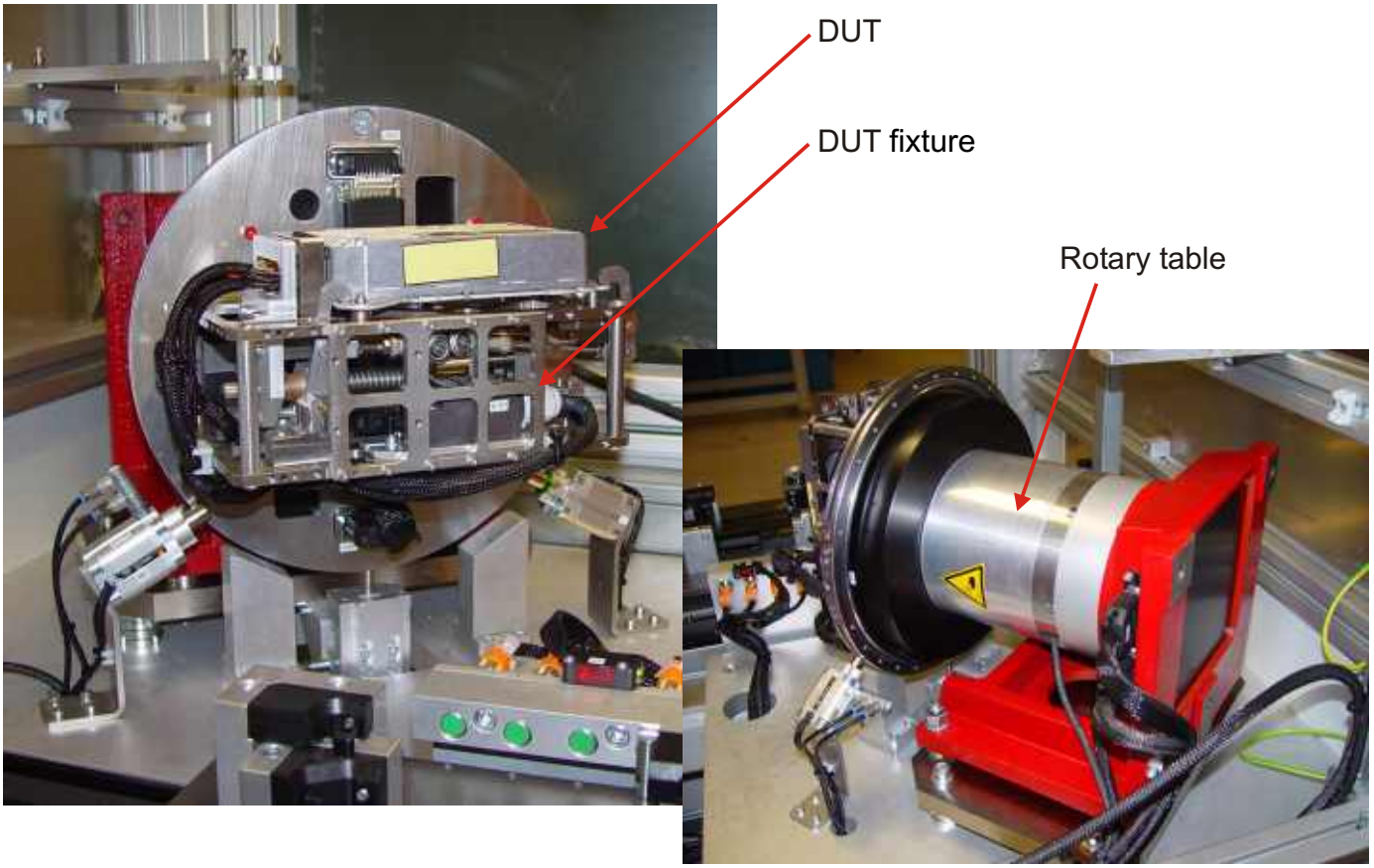
The measurement of acceleration, dumping and slope in all three space axes (x/y/z):

Function:

- Supply of the DUTs over coded workpiece carriers
- Insert a DUT into the contacting unit by a robot
- Contacting and automatic test
- Removal of the test specimen by a robot
- pass-fail selection over product carrier transponder

Layout of the system

- Inlin system with automatic DUT handling (robot), precision turntable and three changeable test specimen fixtures.
- The rotating motion is kept constant with an accuracy by ± 0.1°/s.
- The adjustment of the positions takes place with an accuracy of ± 0.1°.
- Individual functional test of the sensors at the turntable in an axle on 0.1° accuracy.
- Change of the axis of rotation by converting the test specimen fixtures.



The test system is calibrated by a reference standard which measures the spatial position. Within a tolerance the DUT must have the same orientation in space as this reference standard.

Thus the offset drift for each individual sensor can be determined after inserting the test specimen. The reproducibility of the angular adjustments for the complete system amounts to at least ± 0.05 ° within the limits of 3 sigma at a number of 50 repetitions.