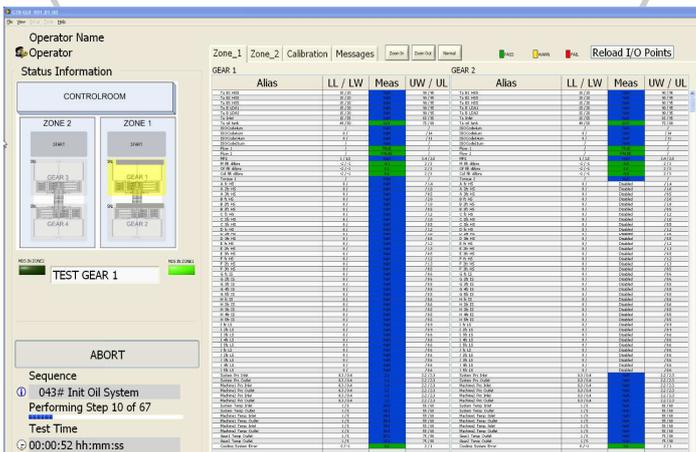


CompactRIO GEAR TEST BENCH



Application

Test of 3+ MW gears for vibrations and wear by particle monitoring. Control of the gears and support systems are implemented using National Instruments CompactRIO equipment. Each gear weighs 30+ tons and are handled by cranes. The test bench takes up approximately 700 m² in 2 floors.

The system is serviceable via remote connection.

Software

The application is based on National Instruments LabView. The software executes in several threads and performs both test sequencing and control tasks. The software handles communication with many subsystems from different suppliers, involving several communication standards. All time critical tasks are handled by the CompactRIO system. Calibration of the Brüel & Kjær pulse system is an important part of the test and is integrated into the software.

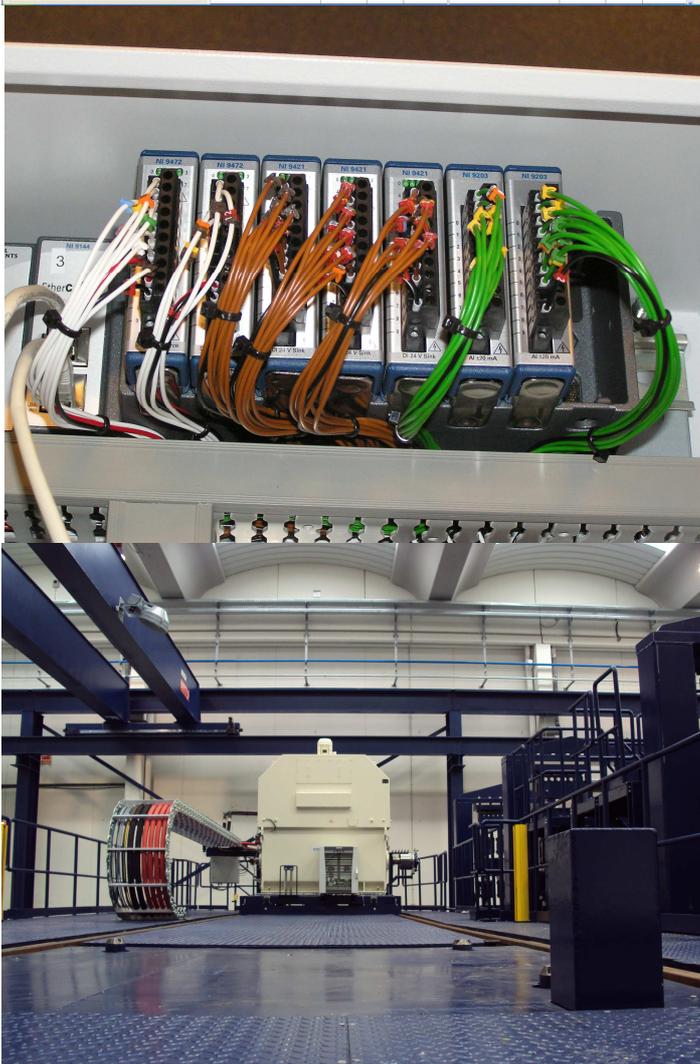
A comprehensive test report for each tested gear is produced by the system on test completion.

Diversity handling takes care of handling test limits and stimulus that changes depending on the specific product variant of the gear tested.

Product Diversity handling, data logging and the Graphical User Interface (GUI) is implemented using DSE's comprehensive standard components for test applications.

Hardware

The hardware consists of 12 NI CRIO chassis and an NI industrial controller. Vibration measurements are done using the Brüel & Kjær pulse analyzer platform. Turning motors and controllers are supplied by Convertteam. Each turning motor is capable of delivering/loading the gear under test with 3+MW. Operator safety is a major issue on this system and is handled by a dedicated safety system.



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