

Student:

Start date: February, 2017

Duration: 20 weeks / 840 working hours

Company: Inholland Composites location Delft

Client: Moog B.V. & Gantner Instruments

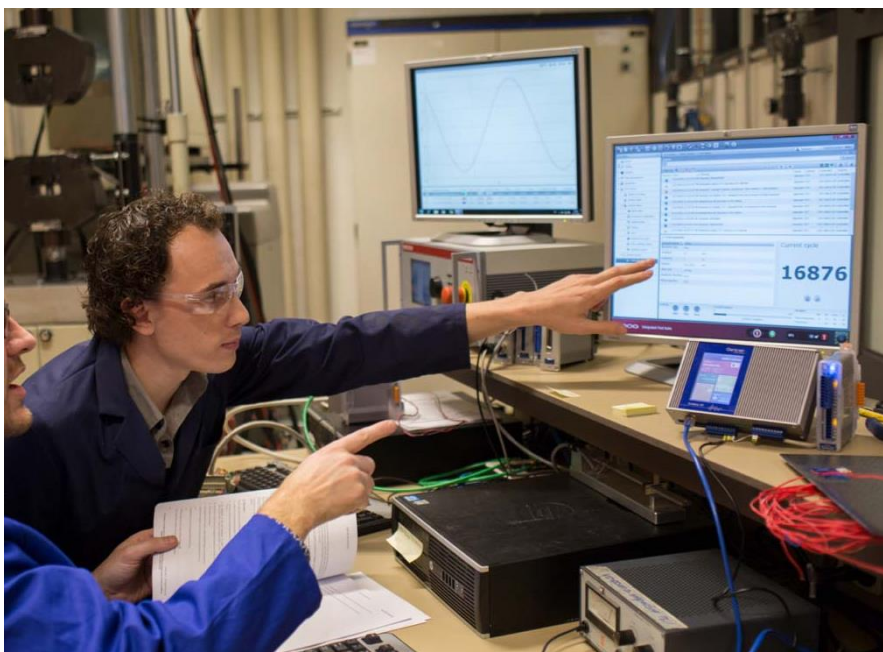
May 26, 2016

Title: “Smart Bench” for dynamic material & component testing

Context:

Inspired by the new technologies of the 4th industrial revolution, the related philosophy could be used to upgrade an existing dynamic test bench at Inholland Composites. This hydraulic test bench is typically used for the validation of material and component samples for the automotive and aerospace industry. For the last ten years control and measurement equipment has been replaced as part of a modernisation strategy. In September 2016, as part of a graduation project, a student began the first phase of this modernisation by creating a link between the Moog control system and the Gantner measurement system. To complete the implementation of this strategy a project needs to be initiated to implement the next step of the current test system to become a SmartBench for dynamic testing. The goal is to integrate both systems into a single system for dynamic testing, and to investigate and implement the additional developments required for test bench automation.

Moog partnered up with Inholland Composites in 2015 with the aim of gaining experience in the validation of the latest software releases. Gantner Instruments started collaborating in early 2016, due to their desire to experiment with new ideas in this field, and supplied a Q.Bloxx measurement system.



Problem definition:

Which developments are required to automate the process of collecting, organising, visualising and analysing test data.

Objective:

Integrate the existing motion controller (Moog) and measurement system (Gantner Instruments) into one system for dynamic testing. Investigate and implement the additional developments required for test bench automation.

Scope of work:

- Project plan
- Requirements analysis
- Technical design specification
- Development of technical design
- Demonstrator and testing
- Validation of demonstrator
- Recommendation for further developments

Company information:

Inholland Composites, located in Alkmaar and Delft, is a very well equipped, high-tech laboratory in the field of composite materials and structures. The focus is on fibre reinforced plastics which provide durable and lightweight solution in a wide range of applications. Inholland Composites has a close relationship with Inholland Aeronautical Engineering faculty with the mission to put theory into practice and provide students with current education, which connects to today's business.

Additionally the Composites Laboratory does research and development for the public and private sector and provides courses for educational institutions and businesses on the use and application of composite materials.

Date: Dec 21, 2016

Written by: Arnold Koetje

Checked by: B. Brocken/M. de Vlieger/M.U. Rehman

Approved by: Gantner Instruments / Moog

Authorised by: Antoine Gerritse