GT-9050 AUTOMATED ROTOR HOUSE FASTENING

FISHING FOR EXPERIENCE

Project GT-9050 Automated Rotor House Fastening is a concept study for a technically and commercially improved automated process of fastening the Rotor House bolts following a structured approach acc. to VDI 2221.

PROJECT TEAM

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PROJECT CO-ORDINATORS/(SPONSOR)

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Introduction

The bolts securing the Generator Rotor House are installed vertically, typically at a height ranging from 1500mm to 2500mm. These bolts can be arranged in uniform circular patterns, specific configurations. Due to variations in bolt size, torque requirements differ accordingly. Moreover, the process may shift from torque application to tensioning. Consequently, diverse systems and tools become necessary, demanding a modular design approach to facilitate automation for forthcoming offshore wind turbine iterations.

Objective

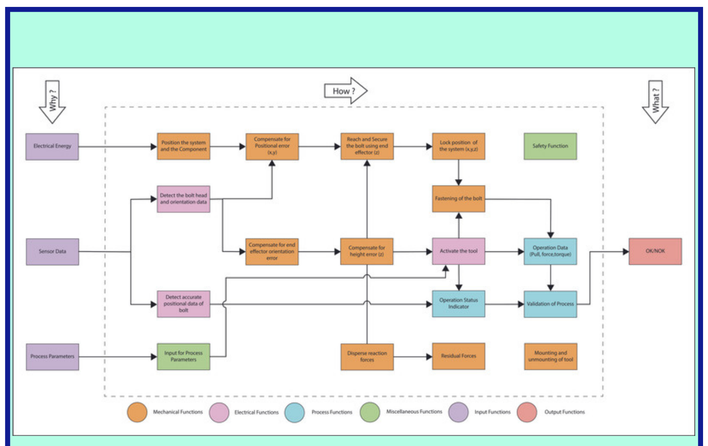
To develop a modular design, capable of fastening various bolts circles, bolt sizes (torque) and processes (tensioning)

Methodology

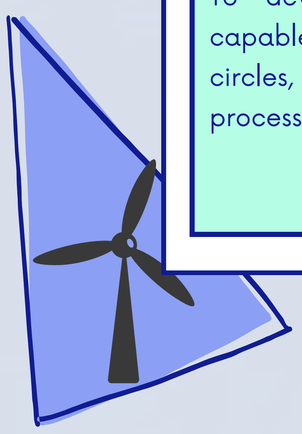
Concept Design Development based on VDI 2221

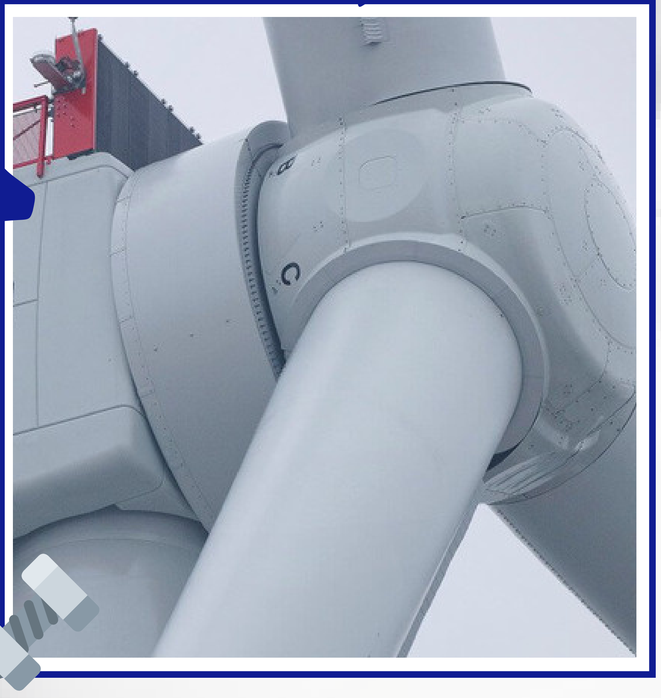
- List of requirements
- Black box design
- Functional structure
- Basic solution concept
- Morphological solution matrix
- Concept design
- Documentation

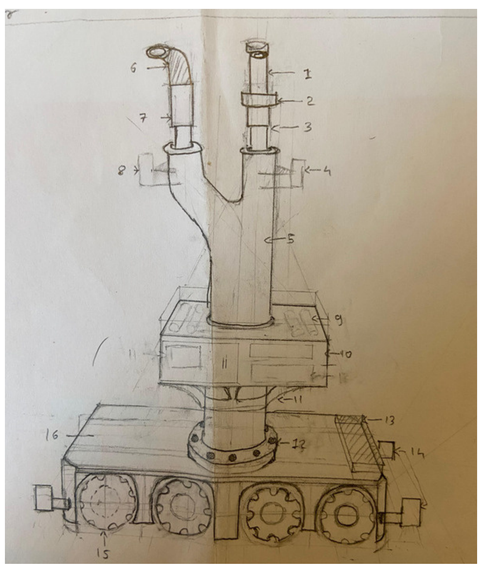
Functional Structure



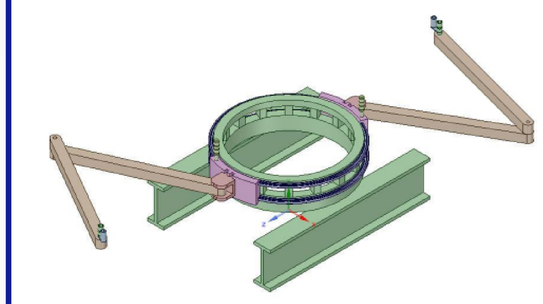
Morphological Solution Matrix







Winning Solution



REFERENCE & RESOURCES

Background Image: siemensgamesa.com
Turbine Rotor Hub Image: Windmesse.de