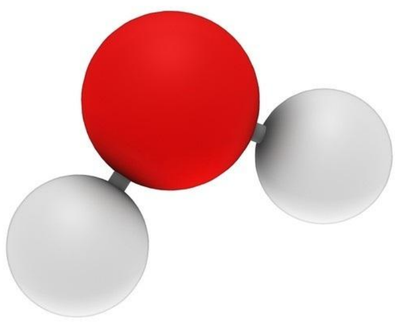
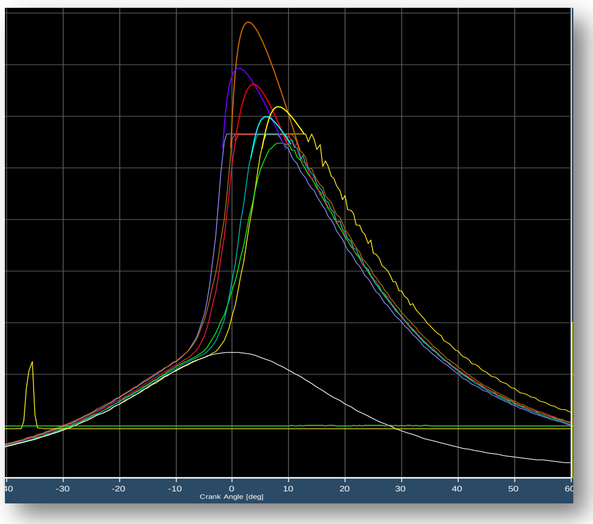


WP 5

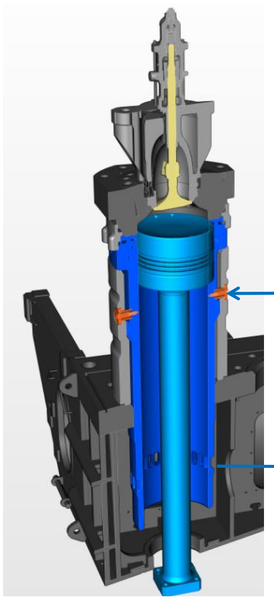
Lifetime Performance Control

WP OBJECTIVES

Develop methods, systems and processes allowing a continuous optimized performance of the power plant throughout its lifetime



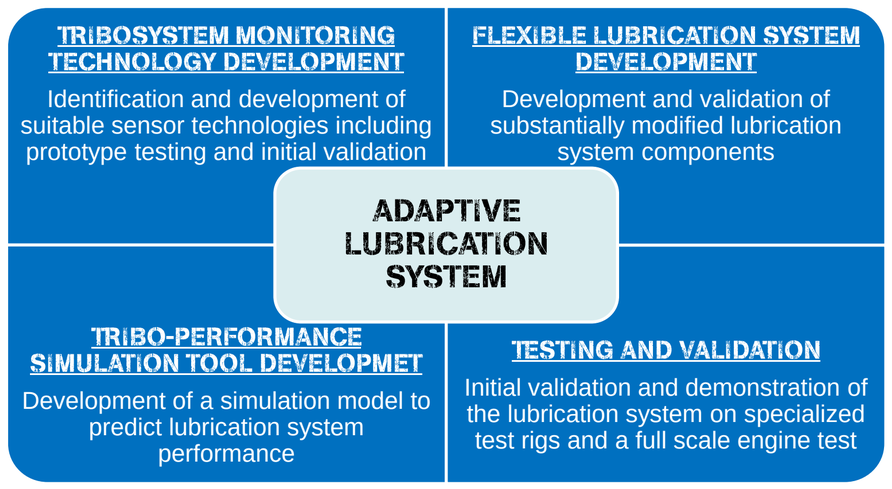
Cylinder pressure curves

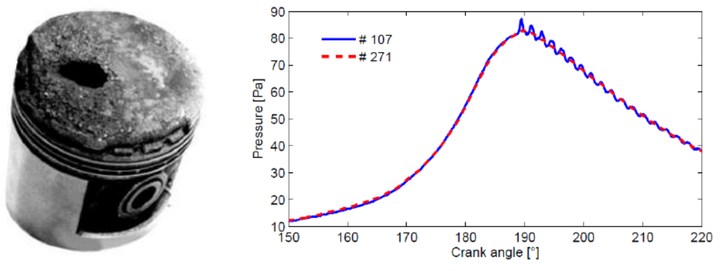


Adaptive lubrication system

EXPECTED OUTCOME

- Advanved lubrication control system
- Optimized lube oil feed rates
- Optimized control & parametrization algorithms
- Technology demonstrators at TRL 6
- <5% divergence of performance parameters from “as-new” state
- 10% lube oil consumption reduction



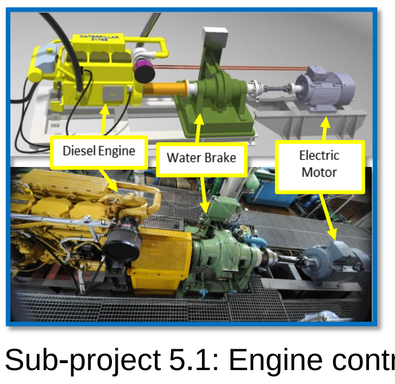


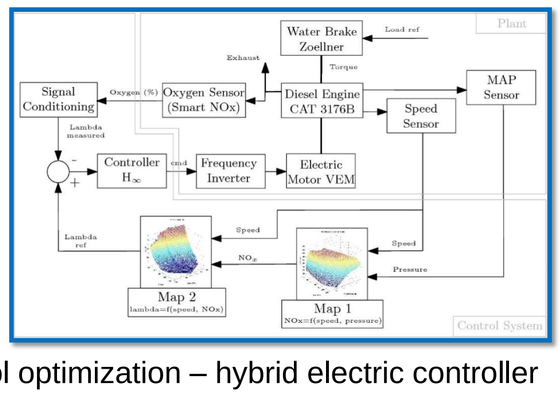
5.1: Knocking phenomena

PROGRESS AND PLANS

Sub-project 5.1:
- Knock control development & testing on engine.
- Plant modelling of hybrid system & controller design

Sub-project 5.2:
- Engine parametrization conceptualization and modelling

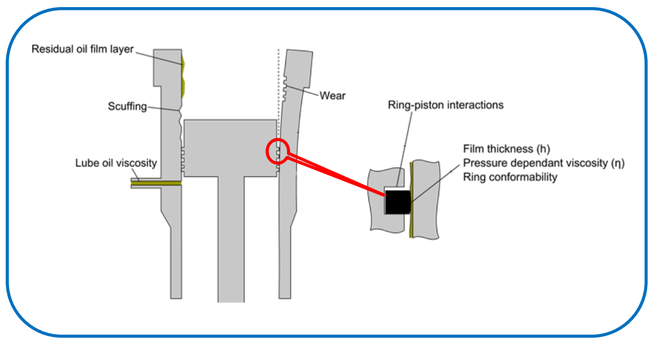


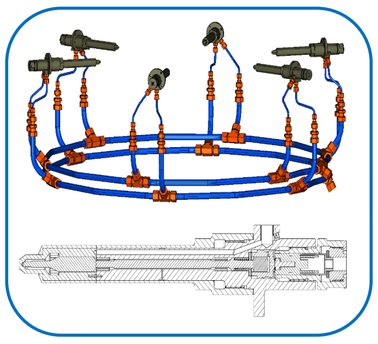


Sub-project 5.1: Engine control optimization – hybrid electric controller

Sub-project 5.3:
- Definition of requirements and design of experiments
- Development of a 1D simulation model to predict injection system performance

Sub-project 5.4:
- Definition of requirements and design of experiments
- Definition of suitable sensor approach





Sub-project 5.3 and 5.4: Keysteps towards the development of an adaptive lubrication system

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