



HERCULES Task 3.2

Status and Progress, March 2005



Objective:

“Intelligent Turbocharger”

- Integrated variable and controlled turbocharging system for substantially improved operational behaviour implying savings in fuel consumption and reduction of emissions

Subtasks:

- Turbocharger PTO/PTI
 - Exhaust gas utilisation for overall primary energy savings
 - Aux. turbocharger drive to enhance engine powering up and to diminish soot emission
- Turbocharger featuring variable flow areas
 - Pivotal turbine nozzle vanes for improved turbocharger operation
 - Variable compressor vanes to establish access to an extended operation range
- Prototype tests
 - Prototype tests on two-stroke and four-stroke engines



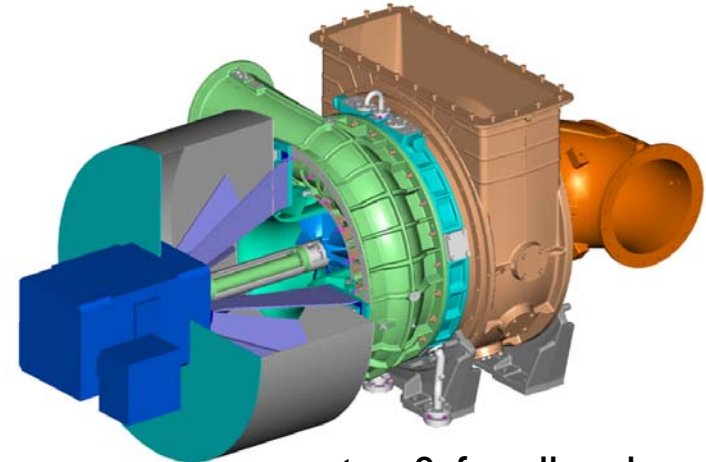
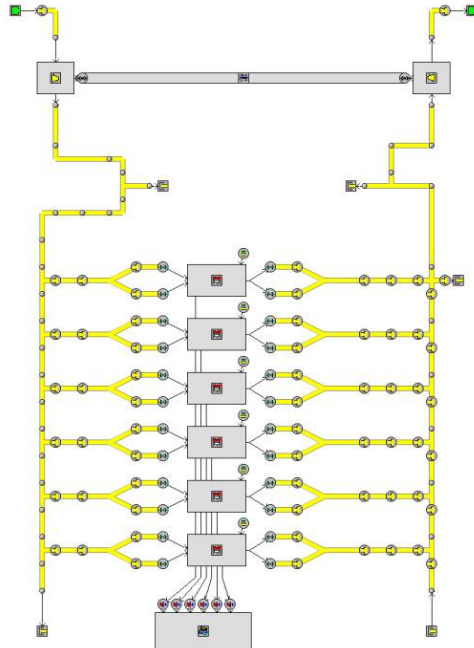
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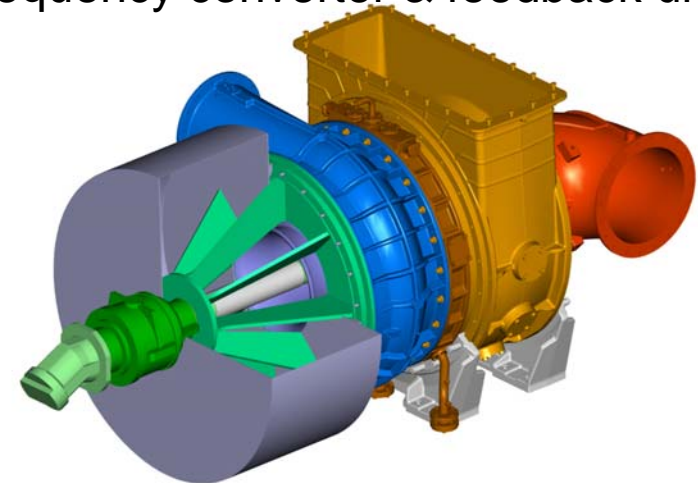
MAN B&W Diesel

Selected results

- Concept studies for electric and hydraulic PTI/PTO facilities
- Simulation of stationary and transient engine operation using commercial process cycle software
- First test of variable turbine



Motor & frequency converter & feedback unit



Piston pump & planetary gear