HERCULES

WORKPACKAGE 4: Combined cycle
Task 4.1 Hot engine & turbo-compounding

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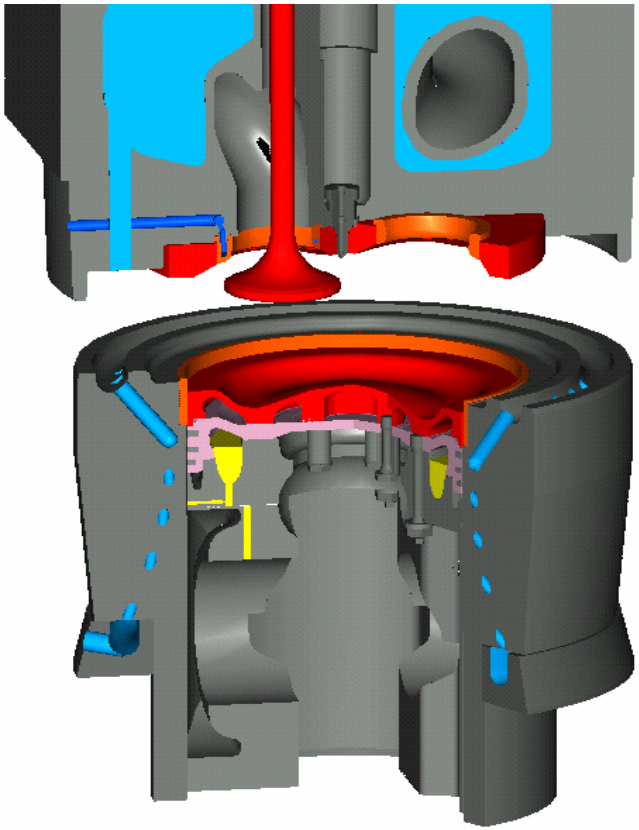
HERCULES Task 4.1 Progress report

Responsible partner: Wärtsilä Finland Oy

- **Target:**
  - Development of Hot engine concept for turbo-compounding

- **Progress:**
  - major part of Hot engine component design finished



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HERCULES Task 4.1 Progress report

Responsible partner: Wärtsilä Finland Oy

- **Progress: Hot engine components, design finished**

- Hot engine piston no.1. with reduced heat flux toward cooling oil
- Hot engine piston no. 2 similar to no.1, but with alternative fastening system
- Hot engine piston no. 3 with conventional design, but with heat and corrosion resistant coating on the piston top
- Cylinder liner with improved thermal fatigue resistance and, with locally (1st ring TDC) improved cooling and improved tribology (surface modifications)
- New hot engine piston ring with temper resistant coating
- Cylinder head modified (minor change) to new cooling system and hot engine exhaust valve seat ring (separate cooling)
- New cylinder head gasket
- New type of exhaust valve seat ring with improved cooling
- New exhaust valve
- New injection nozzle to cope with higher temperature
- Engine block modification to higher boost pressures (if needed based on FEA)
- Components for turbine washing system
- Components for steam injection system
- Components and devices for turbocharging / turbocompounding system

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