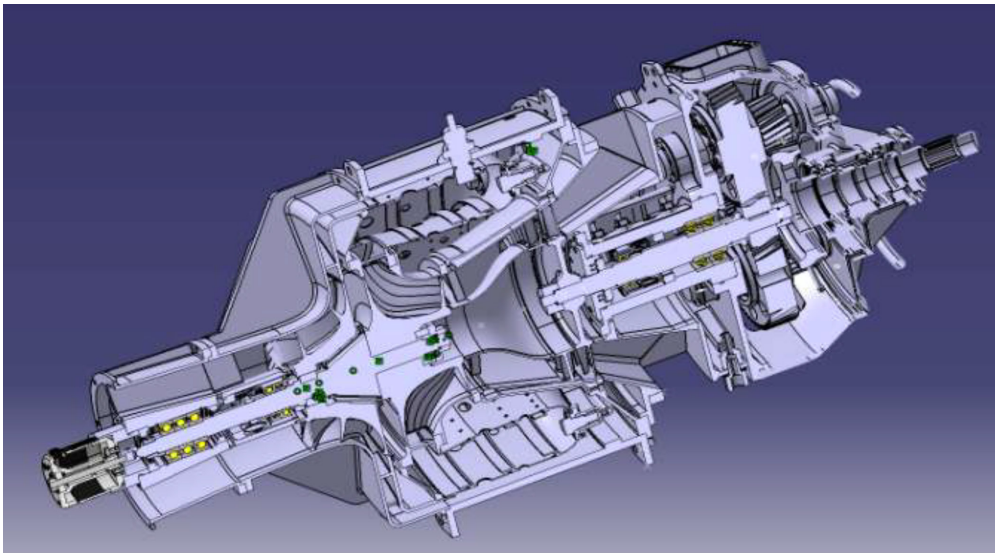


# TURBO SHAFT ENGINE WITH FREE TURBINE POWER OF 70KW

## Engine

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Production of prototype – first testing in February 2025



MTS70

- Length of engine 660 mm
- Diameter of engine 272 mm
- Mass flow of air 0.9kg/s
- Mass flow rate of fuel 14 g/s
- Power 70kW
- Weight 24,5 kg
- Pressure ratio for centrifugal compressor 4
- Max temperature in front of turbine 1150 K
- Design point rpm of gasogenerator 69 500 rpm
- Design point rpm of free turbine 45 000 rpm
- Exit shaft rpm of reducer 5500 rpm
- Max intake mach number 0,8 m
- Max operational height 10000 m
- Max starting height 4000 m
- Working hours 1500h
- Lubrication - closed system with oil
- Kerosene jet A1
- Automatic control of engine and automatic starting procedure
- Constant rpm control of free turbine
- Control system STM32 cortex m4 based (bare metal)
- Defining the limiters from mathematical model (Temperature in front of turbine, flameout limit for combustion chamber, max and min rpm of the engine)
- GUI (STM32 based with 7inch monitor)
  - Manual mode
  - Automatic mode
  - Testing subsystems
  - Parameters settings
  - Procedures settings
  - Limiters and alerts settings

- Monitoring of engine (how many starts, how many shut down, how many hours is working and etc.)
- Data logging
- Telemetry function
- Error handlers
- All components of subsystems are on engine
- Connectors for power, communication with GUI or autopilot and connector with fuel pump
- RS232, RS422 or RS485 hardware for communication

