

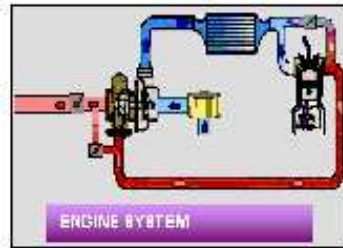



# Sherpa Engine

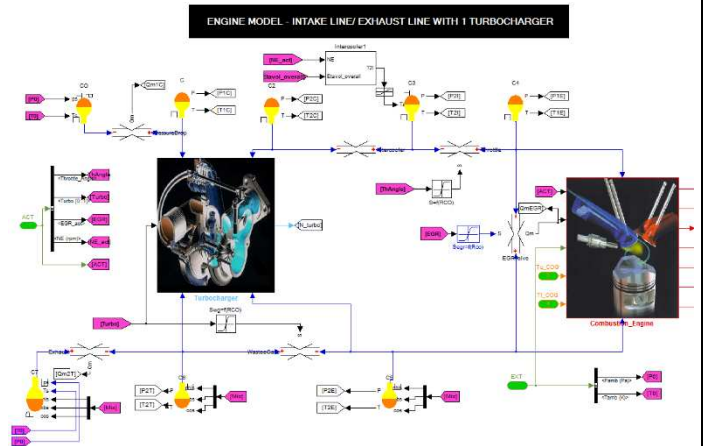
Combustion Engine	Turbocharger	Engine System	Engine Cooling
			

The Sherpa Engine library includes a set of components in thermal fluid and mechanic domain allowing engineers to develop a model of vehicle :

Depending of the needs, the model takes into account air circuit (EGR, Turbocharger, VVT...) and the cooling system.

## Modeling meets the following requirements

- Physical architecture of the system
- Transient behaviour
- Cover of the product life cycle (MIL, SIL, HIL...)
- Diversity: modular and polymorphic approach
- Automatic parameter and validation / qualification for models
- Taking into account of normal, degraded and failure life situations



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## Engine System elements



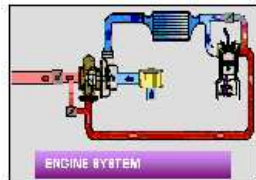
Combustion Engine

The function of the engine is to convert the thermodynamic energy into mechanical energy and to produce mechanical torque.



Turbocharger

The compressor is used to compress the input air in order to increase the inlet engine density. Turbine drives the compressor by transforming the thermodynamic energy contained in exhaust gas into mechanical energy.



Engine system

Combustion engine with its turbocharger.

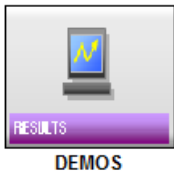


Engine Cooling

Basic model to represent a simple circuit to fill the function of engine cooling. Several level of engine cooling representation can be used.

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## Demos



Demos

Engine System and Vehicle model with simple powertrain and Driver.