



DESIGN ENGINEERING TECHNICAL AGENCY





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Bi and tridimensional design
and modelling of parts
for the automotive industry,
industrial vehicles
and earthmoving Machinery

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DETA company profile

DETA S.r.l. is an engineering companies developing their activities in automotive field, industrial vehicles and train vehicles.

Established in 1981 hold a great experience and knowledge in automotive field both about engines and chassis and about specific mechanical components and has an internal staff with a great background and know-how.

As part of the engine design, the main collaborations are taking place with
FPT POWERTRAIN, FPT Industrial, G.M., CRF (Ruggerini Engine,
LOMBARDINI Engine Twin cylinder 440 cm³ - Petrol - Diesel - LPG for small cars)
Isotta Fraschini (Series marine engine speed), SEATEK (marine engine racing),
PIAGGIO VE, DE TOMASO.

In the field of mechanical design (chassis, steering, suspension, transmissions, gearboxes, bridges, axles, exhaust systems, exhaust, coolant, engine installation, air conditioning and heating, pneumatic and hydraulic systems on board the vehicle, etc..) we have partnered with leading manufacturers such as Fiat Auto, CASE NEW HOLLAND, FKI Komatsu, IVECO, Irisbus, Abarth, PIAGGIO VE.



DETA company profile

In train field, working in strictly collaboration with customer, DETA specialized itself in engineering, design and developing of:

BOGIES

MECHANICAL APPARATUS INSTALLATIONS
(ELECTICAL AND DIESEL TRACTION)

PNEUMATIC SYSTEMS INSTALLATIONS

ELECTRIC SYSTEMS INSTALLATIONS

COFFER STRUCTURES

FURNITURES

SPECIAL TOOLS (STORAGE KIT) FOR GROUPS
ASSEMBLY AND DISASSEMBLY
(TRAFO - INVERTER - DIESEL POWER PACK - ECC)



In the area of trucks and buses DETA have an important collaboration with the main Italian manufacturers, that is IVECO, Irisbus Iveco.

In this area, in close cooperation with the customer, DETA is specialized in the design and development of mechanical components (engine compartment, chassis and body shell, suspension, steering, etc. ...), the installations, equipment body (accommodations seats and handrails; interior and exterior trim, etc ...) and finite element structural analysis. The main work carried out in recent years in the field of passenger transport buses have covered the following vehicles with engines Diesel - Gas - Electric - Hybrid:

Gamma SPR (Eurocargo, Eurostar);
Daily evolution from Gamma S 2000 to Model Year 2014;
CITYCLASS URBAN 10M Diesel and CNG IRISBUS;
CITYCLASS URBAN 12M Diesel and CNG IRISBUS;
CITYCLASS URBAN articulated 18M Diesel and CNG IRISBUS;
CITYCLASS HYBRID 12M IRISBUS;
CITELIS URBAN 10M Diesel and CNG IRISBUS;
CITELIS URBAN 12M Diesel and CNG IRISBUS;
CITELIS URBAN articulated 18M Diesel and CNG IRISBUS;





1981-2016



QUALITY ASSURANCE



DNV-GL

MANAGEMENT SYSTEM CERTIFICATE

Certificato Suo/Certificate No.: 2017 02089 2021-AQ T01 506281 Data prima emissione/first date: 28 febbraio 2017 Validità/valid: 22 dicembre 2017 - 22 settembre 2018

Si certifica che il sistema di gestione di/This is to certify that the management system of

DETA S.r.l.
Strada Carpice, 34 - 10024 Moncalieri (TO) - Italy

È conforme ai requisiti della norma per il Sistema di Gestione Qualità/ has been found to conform to the Quality Management System standard:

UNI EN ISO 9001:2008 (ISO 9001:2008)

Questa certificazione è valida per il seguente campo applicativo:
Progettazione e modellazione bi e tridimensionale di componenti per l'industria automobilistica, veicoli industriali e macchine movimento terra (Settore EA: 34)

This certificate is valid for the following scope:
Bi and three-dimensional design and modelling of parts for the automotive industry, industrial vehicles and earth moving machinery (EA Sector: 34)

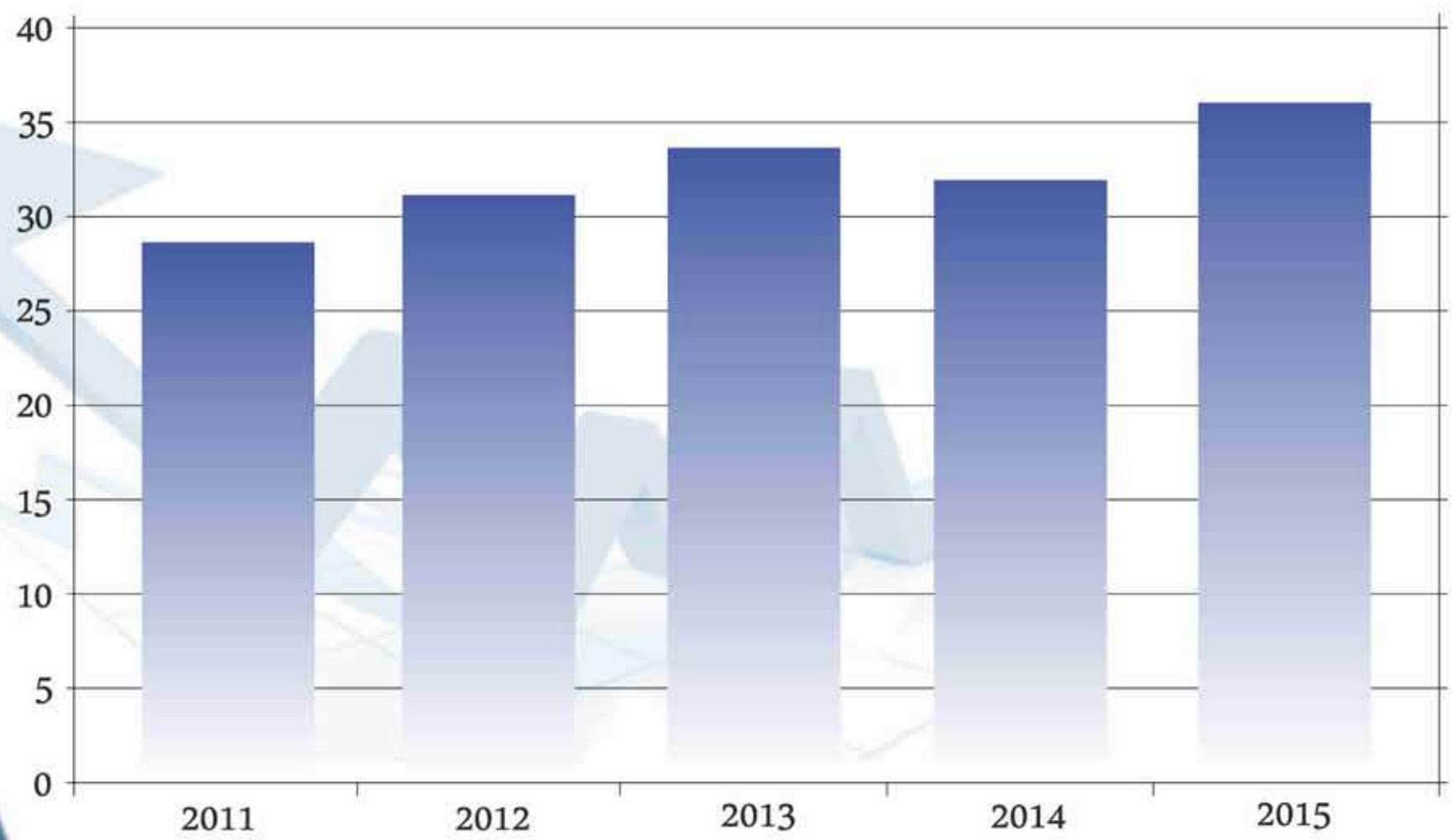
Scopo e Data/Scope and date: Simmetale, 13 ottobre 2017

Per l'Organismo di Certificazione/ For the Certifying Body:

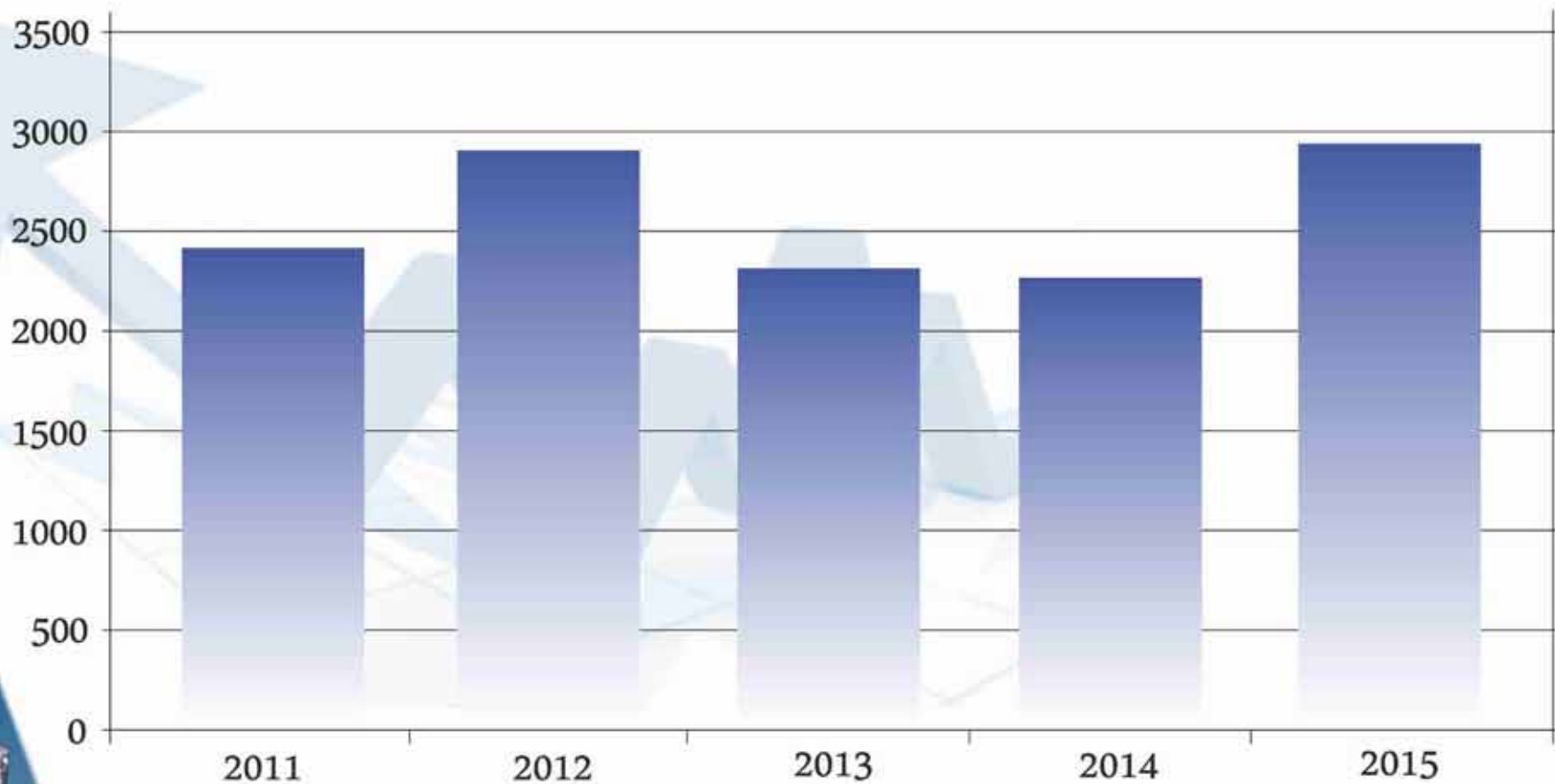
Walter Maravigli
Management Representative

La validità del presente Certificato è subordinata al rispetto delle condizioni specificate nel Contratto di Certificazione. L'uso di simboli di qualità su cui non è stata verificata l'adeguata conformità agli standard DNV-GL è vietato. www.dnv-gl.com

Workers



Turnover



DETA Technical equipment

Deta is equipped with state of the art software and hardware technologies.

CAD software used for design and modeling:

IBM Dassault - Catia

PTC - Pro/ENGINEER

UGS - Unigraphics

AutoCad

Solidwork

Software used for FEM analysis:

PRE e POST processor – HYPERMESH

LINEAR SOLVERS – NASTRAN AND ANSYS



Structural analysis types



Strength, Durability & Misuse:

- Strength
- Durability (Static and Dynamic Approach)
- Misuse (mechanical, thermal, couple thermo-mechanical)

Crashworthiness:

- Full Scale impacts
- Pedestrian impacts
- Subsystems performance evaluation

Optimization:

- Optimization (Size&Shape, Topological, Topographical, Morphing,...)
- Multidisciplinary Optimization
- Multi Objective Optimization

NVH (Noise, Vibration, Harshness):

- Modal
- DFR
- Transient

CFD:

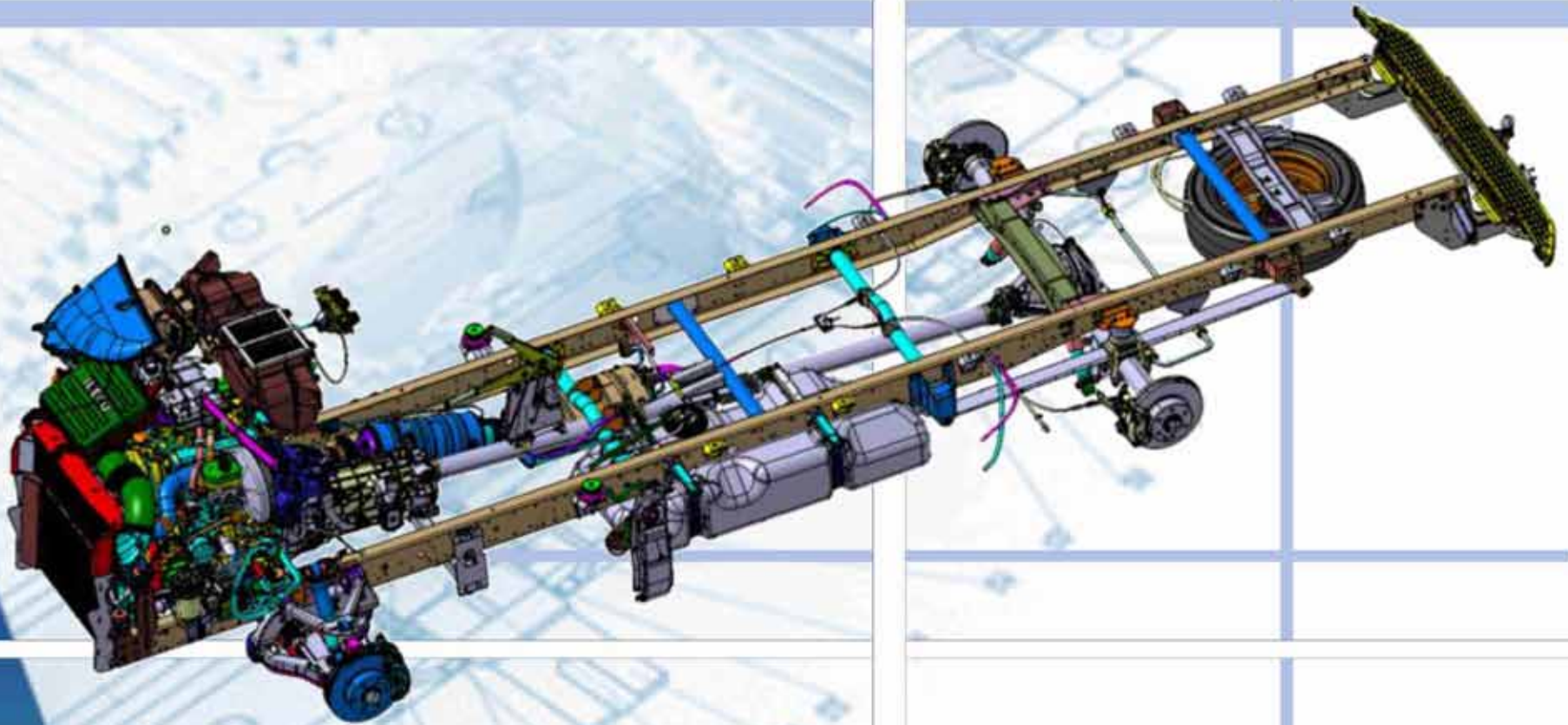
- CFD
- Structural/CFD coupled analysis (one way)
- Structural/CFD coupled analysis (two way)



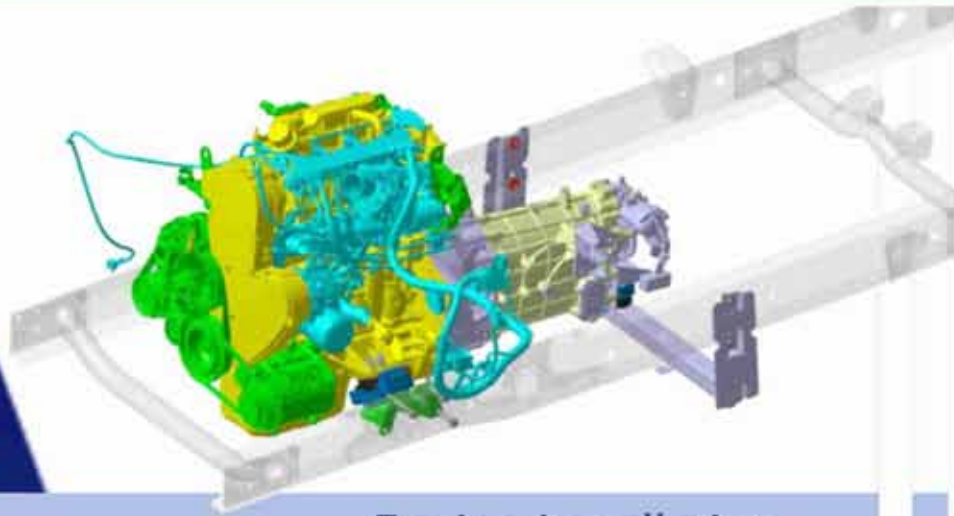
DETA main customers



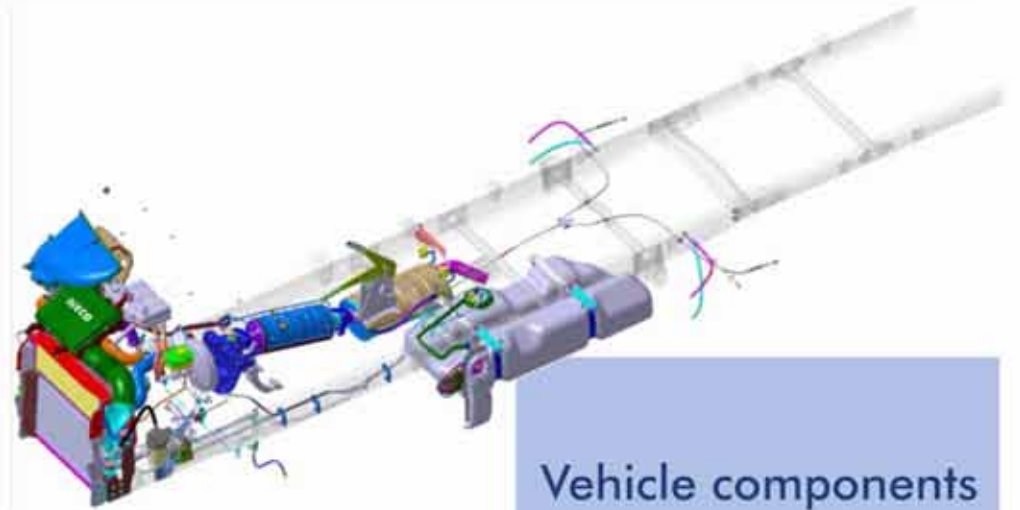
Daily vehicle lay-out studies and components installation



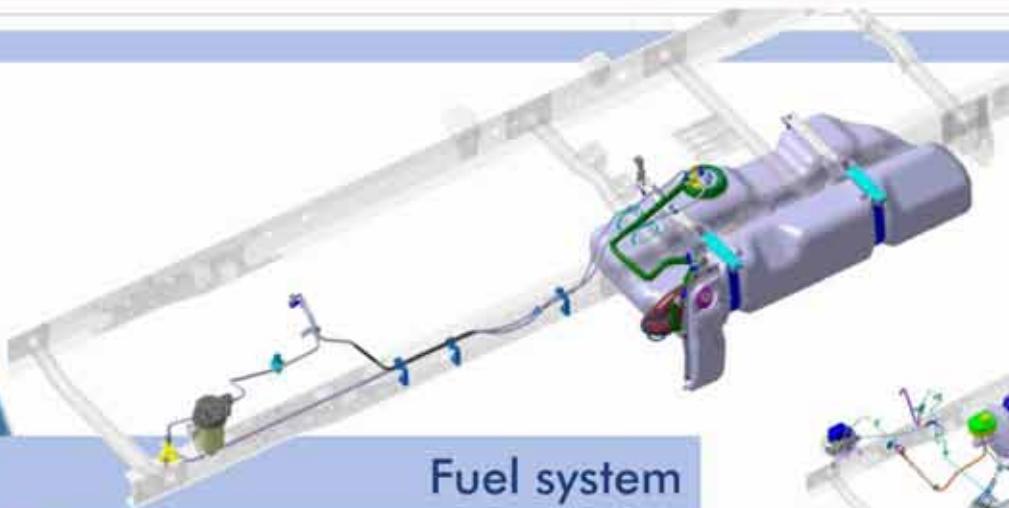
Daily vehicle lay-out studies and components installation



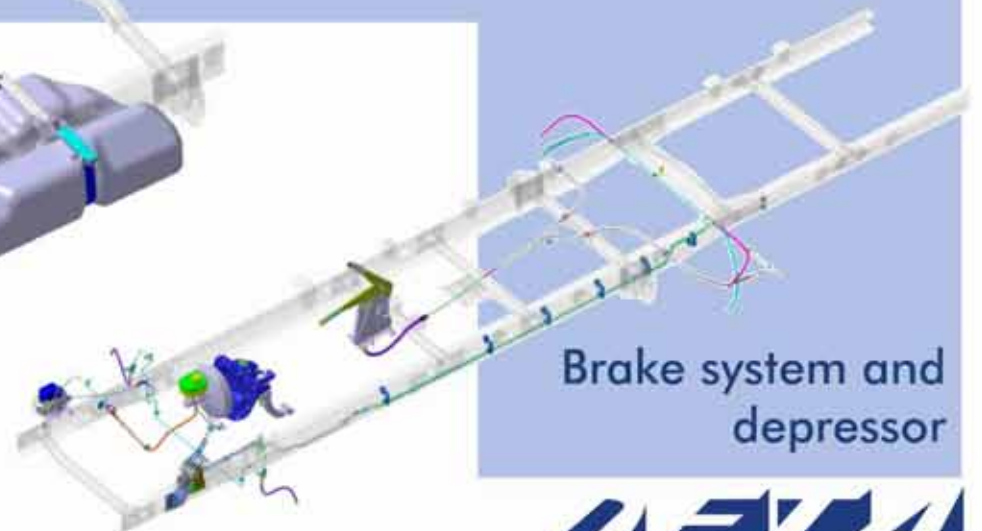
Engine installation



Vehicle components installation



Fuel system



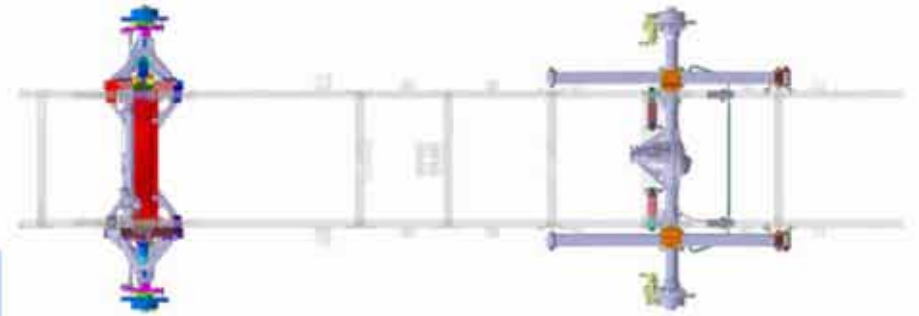
Brake system and depressor



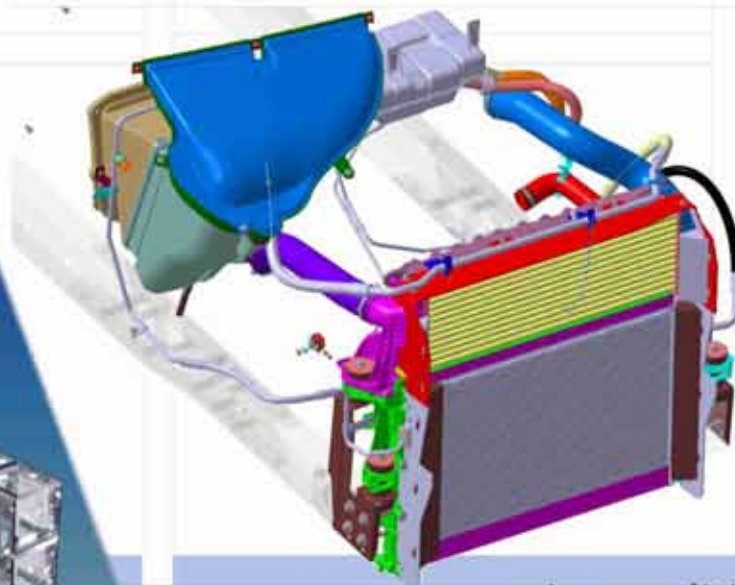
Daily vehicle lay-out studies and components installation



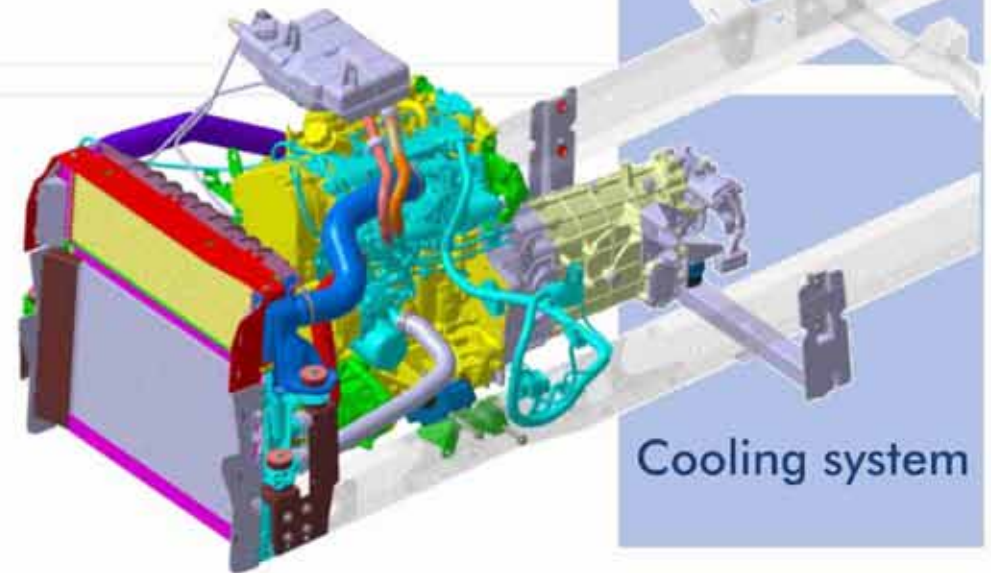
Exhaust system



Suspension



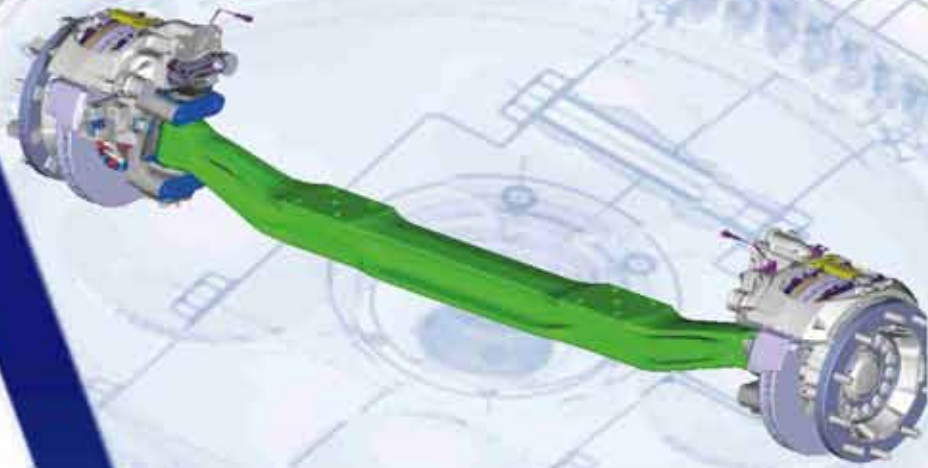
air-conditioning system



Cooling system



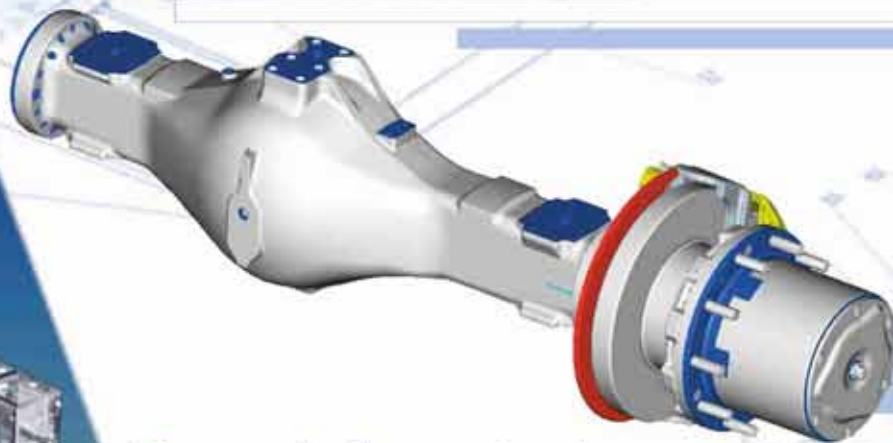
Daily vehicle lay-out studies and components installation



Front axle heavy truck



Intermediate axle heavy truck



Rear axle heavy truck



Rear axle light truck



Engine study and design

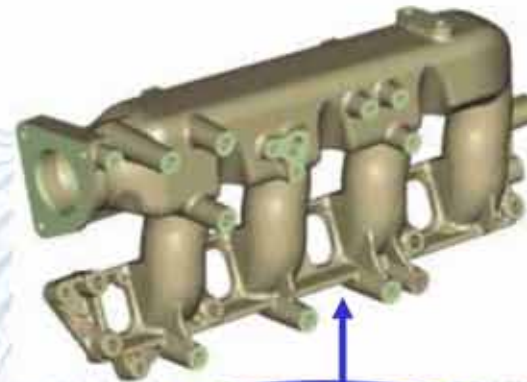
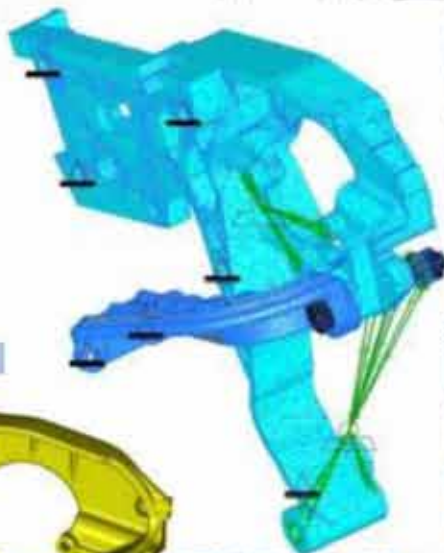
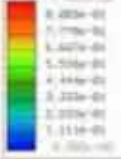


Engine's
layout and fitting
on specific vehicle

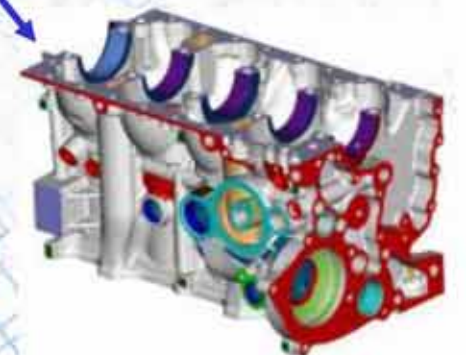
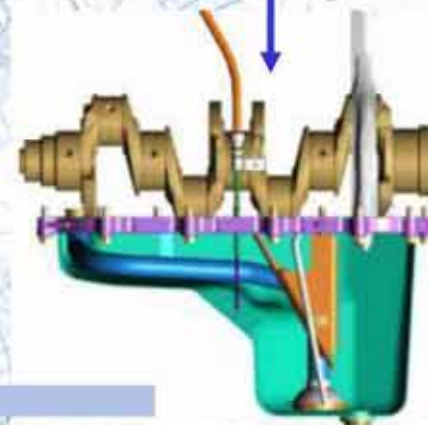


Engine's components

Displacement Avg
Max: +1.0000E+02
Min: +0.0000E+00
Defaulted Original Model
Max Disp: +1.0000E+00
Scale: 3.0000E-01
Node: 2, +1.0047E+02



Engine's components:
study and design



Finite elements structural analysis (FEM)



Engine design for specific installations

Engine 6 Cylinder Marine - 9000 cc. – Power 390 Hp For Automotive, Agricultural and Marine Version



Automotive
2002 – 2004

- Centrifugal Blo_by filter
- Injection system with Hp Pump And common-rail
- EVGT or WG Turbocharger
- Suspension Oil sump



Agricultural - CLAAS
2007 – 2008

- Centrifugal Blo_by filter
- Injection system with Hp Pump And common-rail
- EVGT or WG Turbocharger
- Structural oil sump with integrated Oil suction



Agricultural - CNH
2007 – 2009

- Centrifugal Blo_by filter
- Injection system with Hp Pump And common-rail
- EVGT or WG Turbocharger
- Additional oil pump for High gradients
- Suspension Oil sump

Marine Version
2009 - 2014

- Centrifugal Blo_by filter
- Injection system with Hp Pump And common-rail
- EVGT or WG Turbocharger
- Structural oil sump
- Cooling system with intercooler aftercooler and heat exchanger, With sea water



Engine design for specific installations



Engine 6 Cylinder - 16000 cc. – Power 600 Hp
For Automotive Application
2007 – 2009

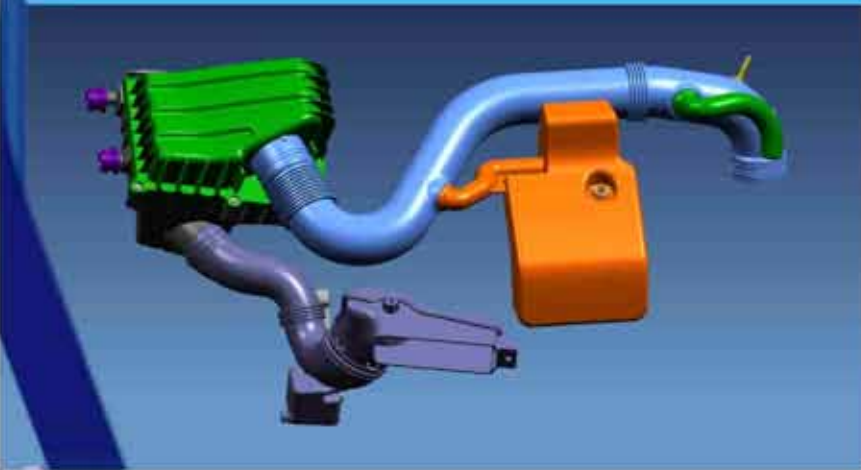
- Centrifugal Blo_by filter
- Injection system with Hp Pump And common-rail
- EVGT or WG Turbocharger
- Suspension Oil sump

Engine 6 Cylinder - 11000 cc. – Power 450 Hp
For Automotive application
2008 – 2010

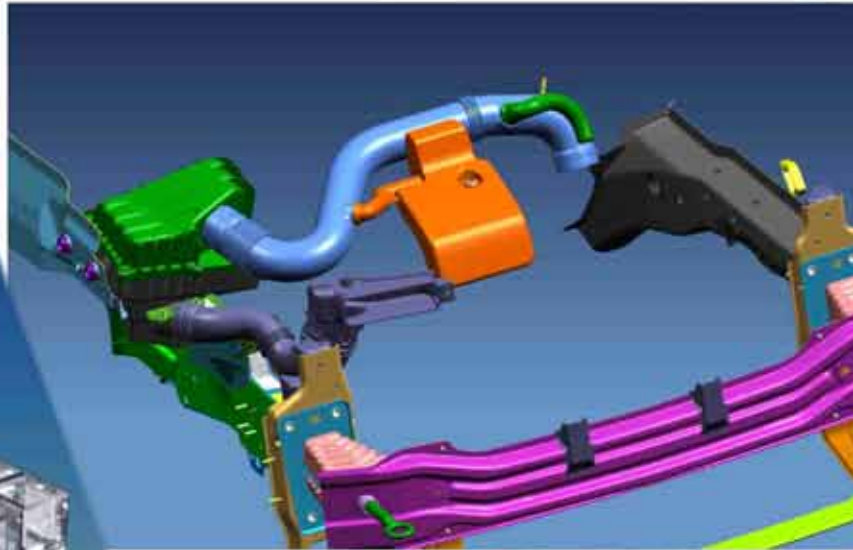
- Centrifugal Blo_by filter
- Injection system with Hp Pump And common-rail
- EVGT or WG Turbocharger
- Suspension Oil sump



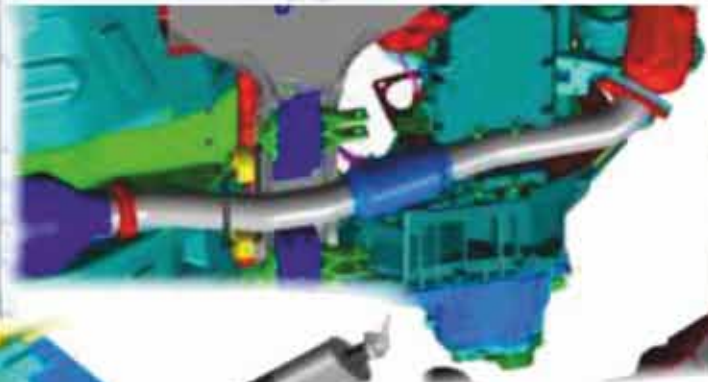
Engine's air intake systems



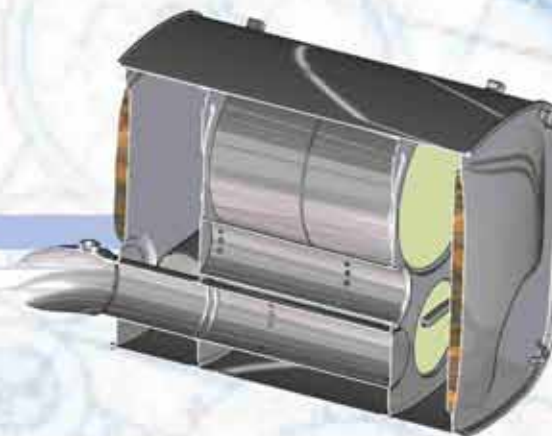
Manufacture
engineering of the
components



Engine's exhaust systems



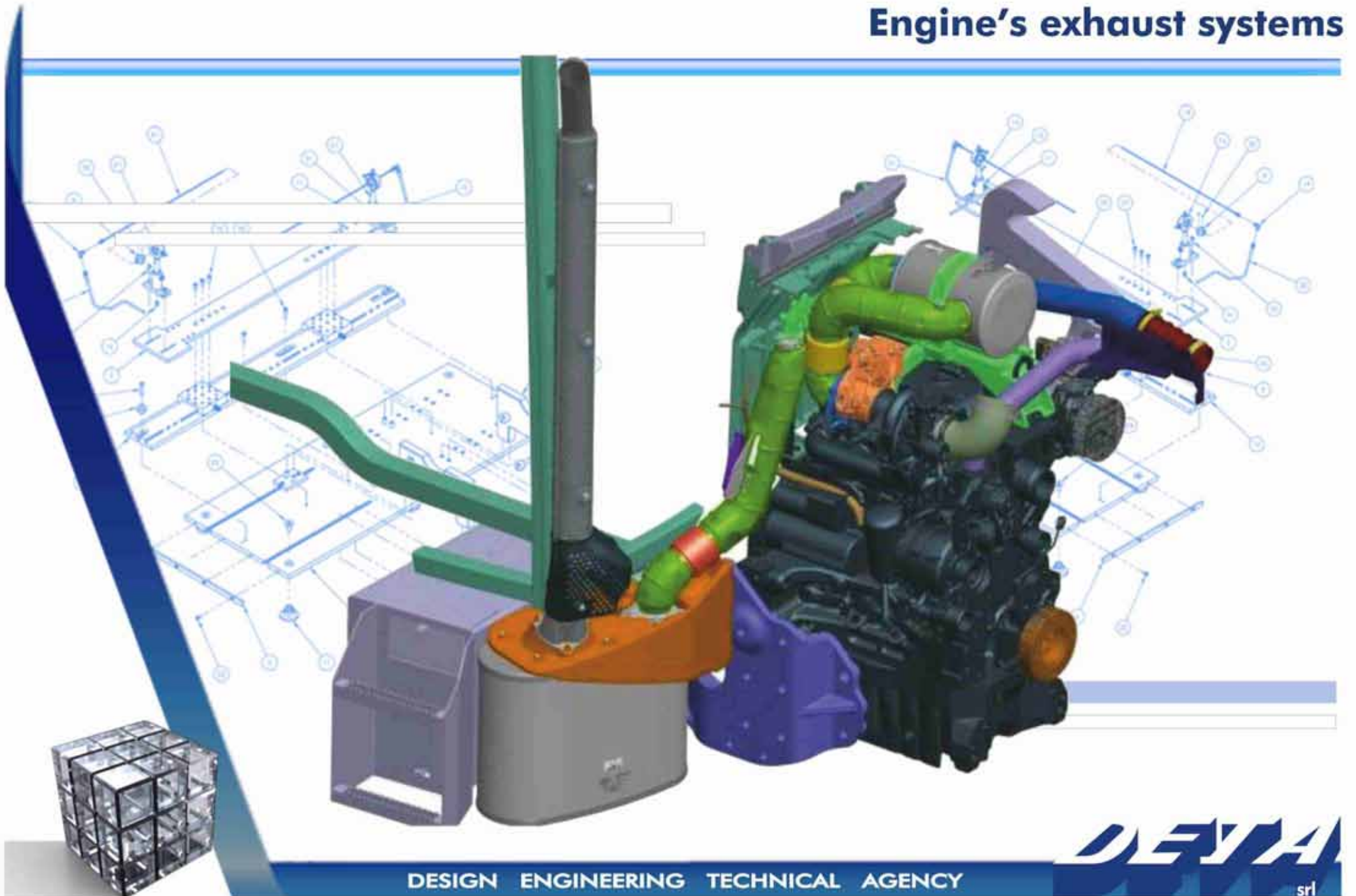
Cars



**Exhaust systems:
study and design**



Engine's exhaust systems



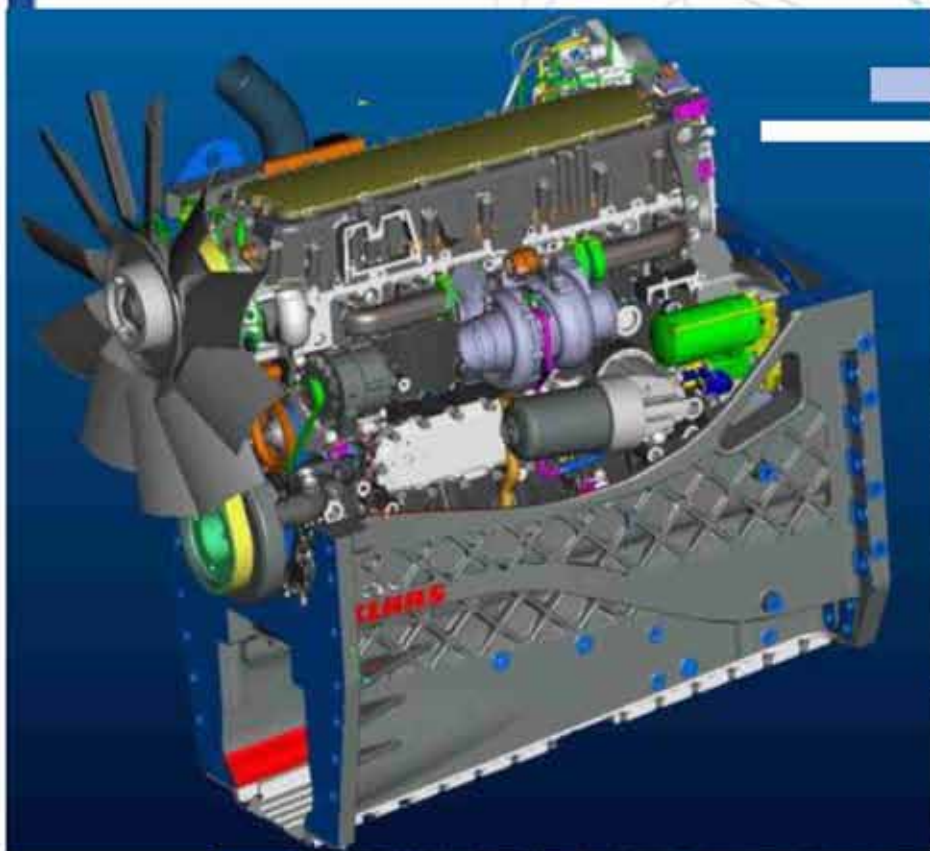
Engine and exhaust system specific installations



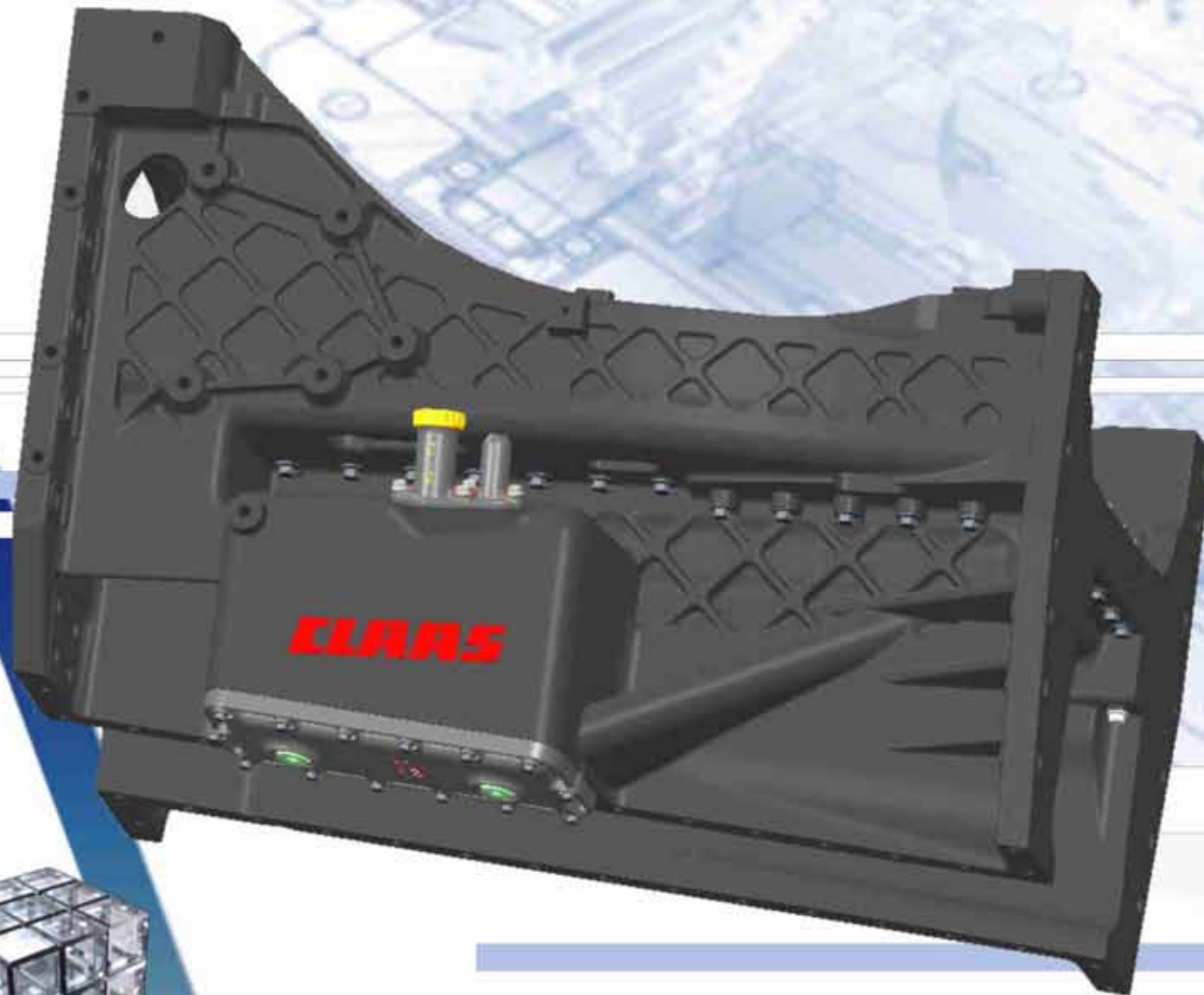
Cursor 9 layout and fitting on CLAAS ACTION 950 Tractor



Engine and exhaust system specific installations



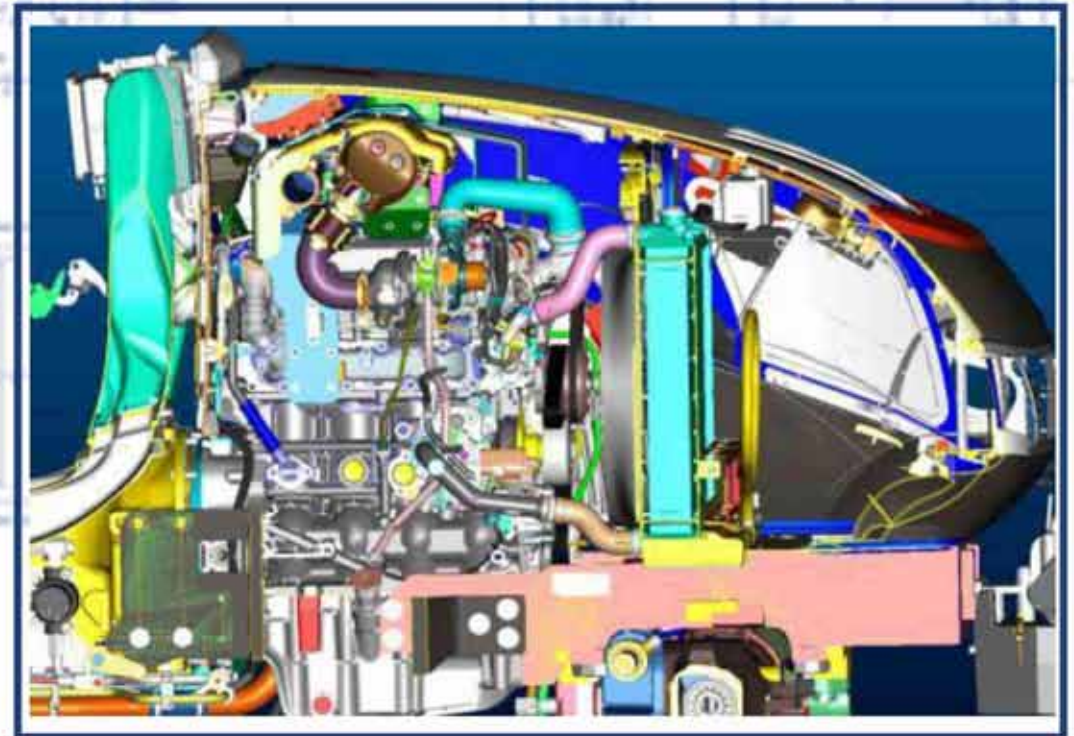
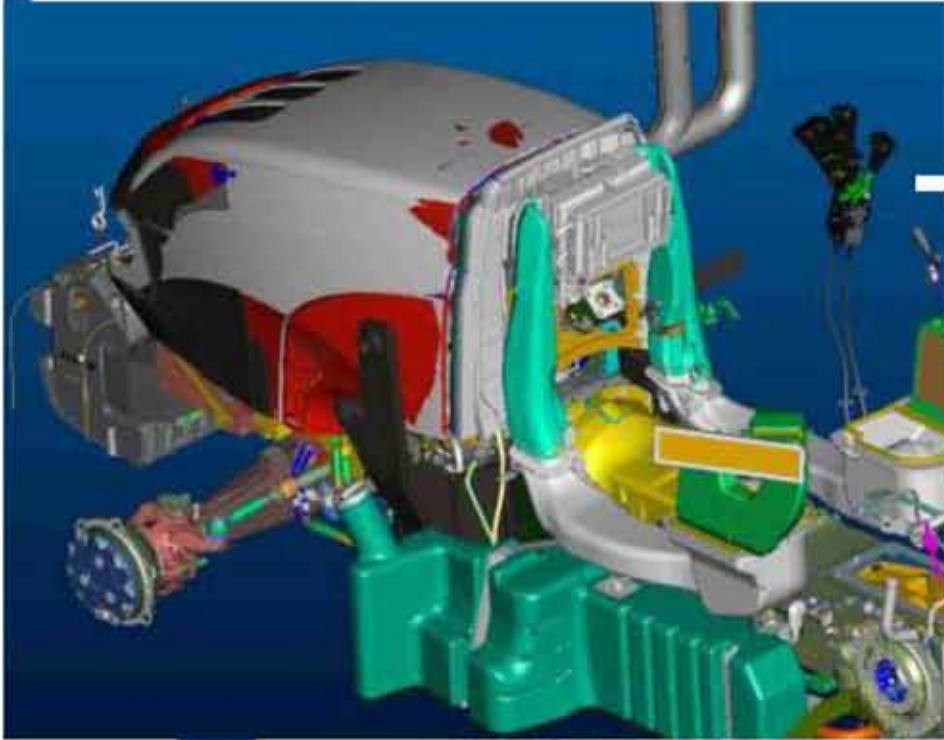
Engine's component



Structural oil sump



Engine specific installations



F5 layout and fitting on CNH Utility Light Tier4



Earthmoving machines



Design of earthmoving machines:

- excavators
- skid loader
- cabs



IVECO: Engine compartment development

