

BLUE ENGINEERING SRL

Company profile 2023 focus: AUTOMOTIVE - RAILWAYS



BLUE ENGINEERING ROOTS: THE FOUNDERS











BLUE Group, founded in 1993 in northern Italy, is now a bench-mark for automotive, railway and aerospace Engineering and Design. With strong multidisciplinary know-how and deep specialization in numerical analysis we maximize speed, quality and efficiency throughout the development process: from concept and styling, design, product feasibility, product engineering, process engineering, industrial ICT, virtual prototyping, simulation, testing, validation and homologation, up to manufacturing support.

A STRONG AND MULTIDISCIPLINARY TEAM

The success of complex development projects hinges on seamless integration and cross fertilization among design, engineering ingenuity and innovation. Our specialized engineers and designers collaborates closely, streamlining processes to maximize efficiency and consistently deliver dependable outcomes and exceptional value to our partners.



EXCELLENCE IS OUR MISSION

Located in the core region of Europe and with its advantages in terms of technology, market, talent and scientific research, BLUE has been successfully engaged in the technical service of transportation products for 30+ years.



WHAT WE DO

- TURN-KEY DEVELOPMENT
- PLATFORM MANAGMENT
- CONTRACTOR COORDINATION
- ISSUING OF SPECIFICATION
- TECHNICAL DOCUMENTS
- COST ANALYSIS

PLUS

- IDEAS OF INNOVATION
- OPTIMIZATION IN QUALITY/CHARGE RELATIONSHIP
- EFFECTIVE PROCESSING METHODS
- PERFECT KNOWLEDGE OF NEW CAD/CAE SYSTEMS
- HIGLY SKILLED TEAM
- TOP FLEXIBILITY OF SERVICE

IDEA OF DESIGN

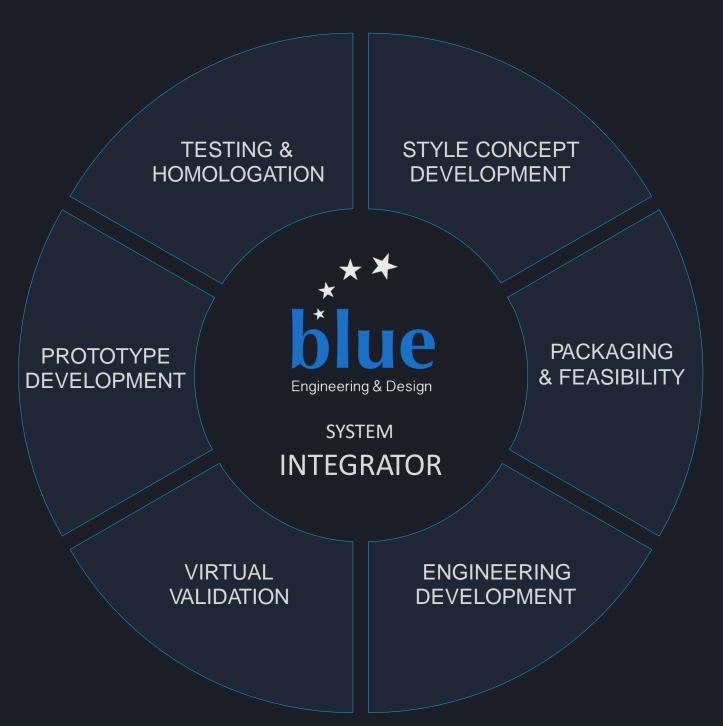
- TO GIVE EACH PRODUCT ITS PERSONALITY
- TO BE THE POINT OF CONTACT BETWEEN DESIGN AND TECHNOLOGY
- TO IMPROVE CONSUMERS' QUALITY OF LIFE
- TO REPRESENT THE BASIC FEATURE OF PRODUCT SUCCESS
- TO ACT A LEVER OF ECONOMIC DEVELOPMENT GIVEN THAT IT IS COMPETITIVE AND INNOVATIVE
- TO EXPRESS CULTURAL VALUES

FROM CONCEPT

TO PRODUCTION



Your trustworthy partner for complex programs, tight schedules and state-of-the-art quality



- TURN-KEY PROJECT
- SYSTEM INTEGRATION
- STYLING & CONCEPT
- PACKAGING & FEASIBILITY
- ENGINEERING
 - BIW & Movables parts
 - Interior & exterior trim
 - Chassis mechanicals & platform development
 - Suspension design
 - Engine installation & aggregate
 - Weight reductions
- ◆ ELECTRICAL/ELECTRONICS development
- ◆ D.M.U. Digital Mock Up
- COST ANALYSIS & COST REDUCTION
- QUALITY & FMEA
- PROCESS DESIGN
- SPECIAL VEHICLES ARMORED and UNARMORED

- HYBRID & FULL ELECTRIC DEVELOPMENT
 & INTEGRATION
- SIMULATION
 - Fluid dynamic analysis for CX evaluation, ventilation, climate comfort, engine cooling,
 - NVH analysis
 - Mathematical analysis for structural, dynamical, thermal and cinematic
 - Crash simulation for safety
 - Simulation of the bio-mechanical behavior of passengers using multibody analysis
- MASTER MODEL BUILDING & PROTOTYPING
- TESTING , VALIDATION & HOMOLOGATION
 - Further dedicated team to NVH & AEROTHERMAL
- MANAGEMENT/SUPPORT
- SUPPLIER MANAGEMENT



RAILWAY VEHICLE DEVELOPMENT: TRAINS - METRO - TRAM - EMU/DMU





















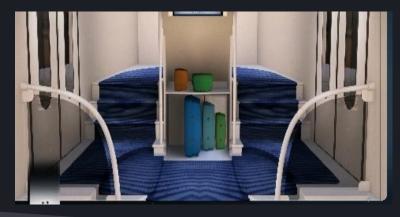




















RAILWAYS worldwide references, clients and partners

BLUE Engineering has extensive experience in designing and engineering all kinds of rail vehicles, including Metro, High-Speed Trains, EMU, DMU, articulated vehicles, pendulum vehicles, light rail, low-floor, subway, single-decker passenger cars, double-deck passenger cars, bogies, and test equipment. BLUE has completed several turn-key projects of designing and engineering rail vehicles accumulating extensive knowledge related to body, bogie development, and simulation analysis.



















Faiveley





















SOFTRONIC













Selected references

blue Engineering & Design

AUTOMOTIVE DESIGN & ENGINEERING: partnering with leading brands

- MASERATI
- MASERATI
- *** confidential
- *** confidential
- *** confidential
- > ALFA ROMEO
- LAMBORGHINI
- Financed R&D
- ➢ GM-AVTOVAZ
- > FCA
- > ALFA ROMEO
- > NAMI
- *** confidential
- > FIAT
- > FIAT
- > FIAT
- > IVECO
- > IVECO
- > MASERATI
- ALFA ROMEO
- ALFA ROMEO
- > ALFA ROMEO
- > FIAT
- > FERRARI
- > FERRARI
- > FIAT
- > FIAT
- > IRISBUS- ORLANDI
- > IVECO
- > IVECO
- > IVECO

- GRECALE
- MC 20
- SUV Full Restyling
- Sedan Full Restyling
- Special Off-Road Vehicle
- Stelvio (SUV C class)
- Huracan (Sportcar)
- Greta Green Recycle Electric Traction Automobile (microcar)
- New Chevrolet Niva (SUV Off road 4WD C class)
- Tipo (Sedan C class)-Tipo (Hatchback C class)-Tipo (estate)
- Giulia (Sedan C class)
- Luxury Vehicle (Sedan E class)
- Small Car off road (4WD A Class)
- 500X (SUV C-Class)
- 500 (Small Car A Class)
- New Panda (Small Car A class)
- Electric Daily (Commercial vehicle)
- Daily 2014 (Commercial vehicle)
- Ghibli (Sportcar)
- 4C (Sportcar)
- 8C (Sportcar)
- 8C spider (Sportcar)
- Fiat Doblò (Commercial vehicle)
- F149 (Supercar)
- F142 (Supercar)
- Fiat Ducato (Commercial vehicle)
- Fiat Punto (Hatchback B class)
- New Domino
- Citelis 9m-12m-18m
- Magelys
- New Stralis





















































Turn-Key DEVELOPMENT and work-packages from Style to Homologation



NEW GM CHEVROLET NIVA



(...) The Next Generation Concept NIVA is developed and built by a truly international team. Ondrej Koromhaz born in the former Czechoslovakia, was the Lead designer on the Next Generation NIVA exterior and Interior; Italian Design house 'Blue Engineering' provided support throughout the engineering and development process; GM – AVTOVAZ local engineering team with the best expertise in how to make the Next Generation NIVA fit 100% to the Russia's rough climate and road conditions (...) http://gmavtovaz.ru/en/company/news/chevrolet niva next generation concept unveiling at the mias 2014 the new generation of the legendary offroader

ALFA ROMEO GIULIA



MASERATI GRECALE EV

ALFA ROMEO STELVIO





MASERATI MC 20 EV

CAE & CAD DEVELOPMENT



MICROLINO Cecomp - Micro EV 2021

- Design of BIW, closures and suspensions
- All CAE calculation and Dimensioning.







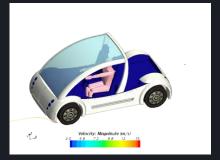


BLUE - Greta EV microcar *2015*

Turn-Key Project



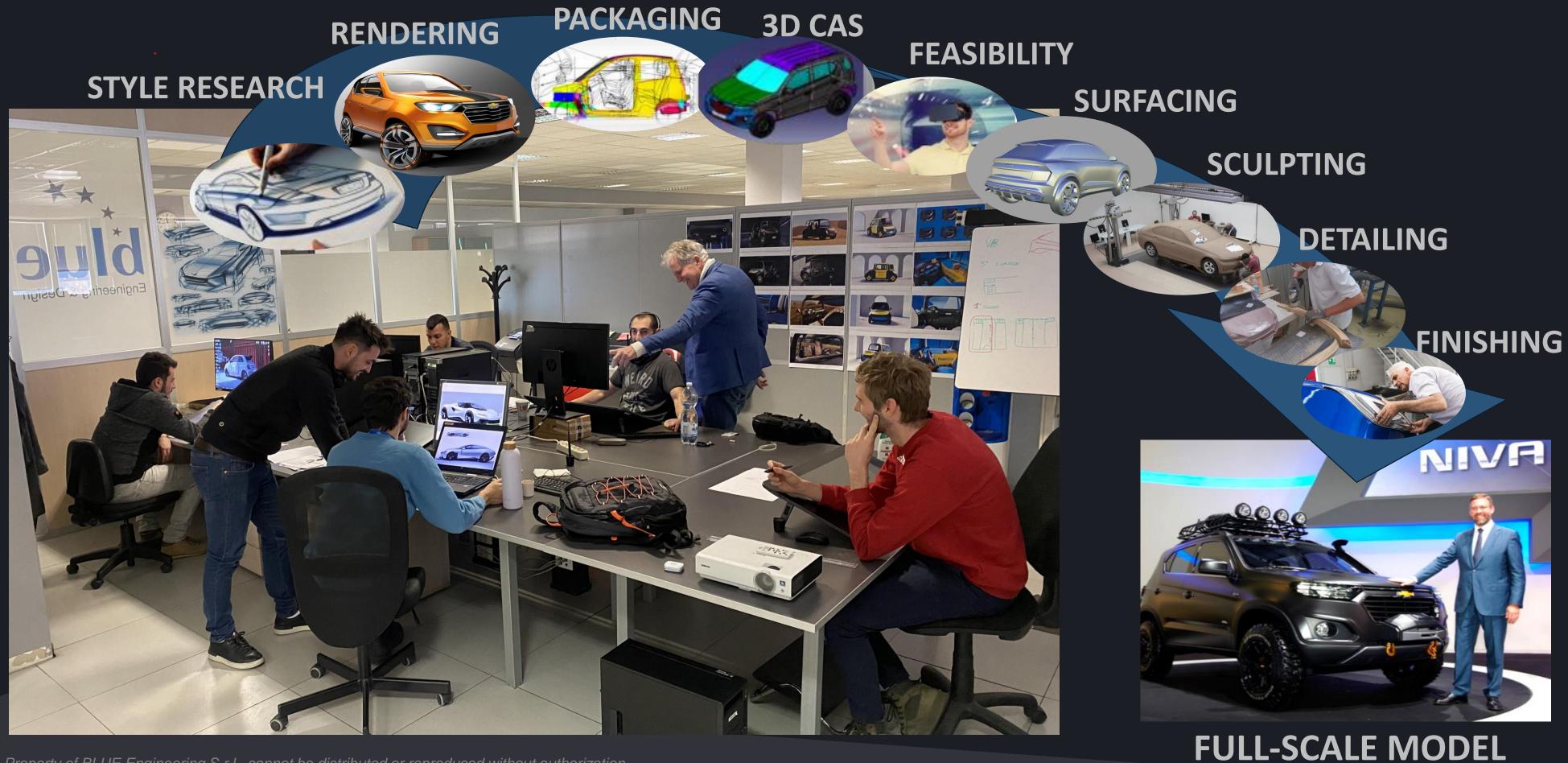






From STYLE CONCEPT to 3D DESIGN





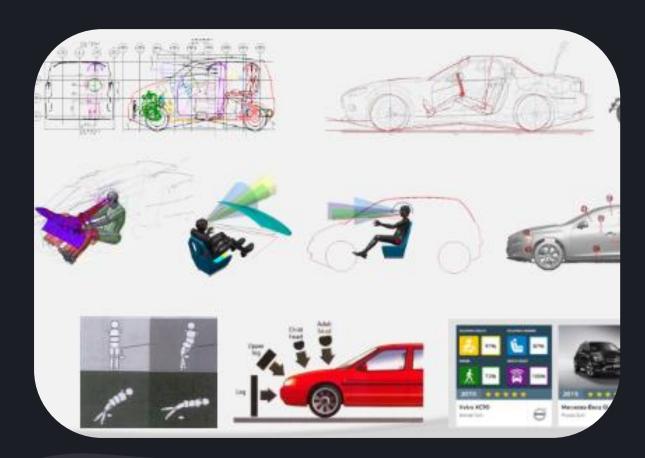
From DESIGN to ENGINEERING DEVELOPMENT



PACKAGING & FEASIBILITY

Design Feasibility handling all standard legislative constraints for the exterior & interior styling research considering of commercialization market and homologation.

exterior & interior styling design till styling sign-off of fully validated and feasible design for industrialization. Sections Book, Gap & Flushes designed to satisfy style and manufacturing requirements.



BODY & CLOSURES DEVELOPMENT

Integrated engineering development based on simultaneous product and process feasibility till assistance to the production launch.

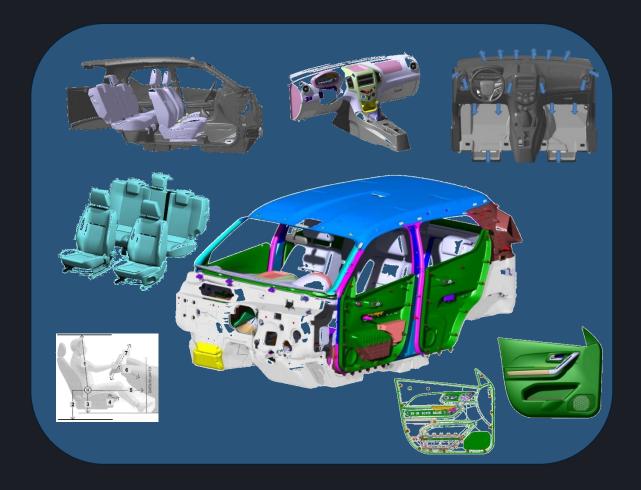
- Upperbody development
- Closures development
- Underbody & Chassis development



INTERIOR & EXTERIOR TRIM DEVELOPMENT

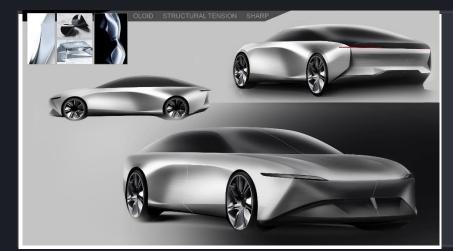
Our engineering development is involved during the phase of macro feasibility till definition with the customer of process of technologies in simultaneous and assistance to the production launch.

- Exterior & Interior trim development
- Dashboard , IP and Central console
- Defroster Air Ducts



NEW CAR

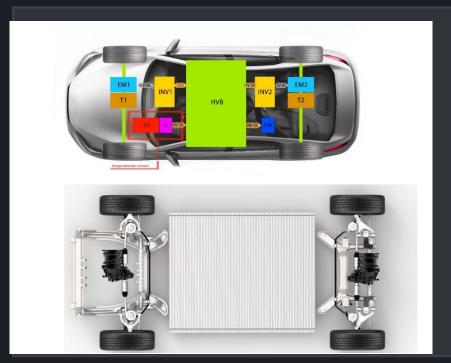
TURN-KEY DEVELOPMENT



STYLE & CAS

CONCEPT AND STYLE DEVELOPMENT

- Style DNA, Design Language
- Benchmarking, Market research
- Sketch, Rendering, CAS, VRED
- Packaging, Product-Process Feasibility



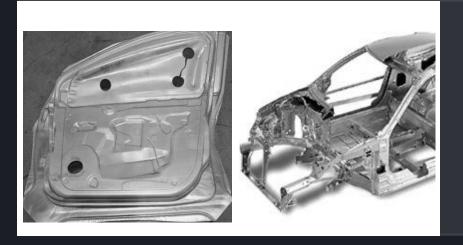
PLATFORM & BATTERY PACK

Body architecture development

- Weight and Size target
- Engine and Gear selection
- Battery sizing

Battery design & simulation

- Single Cell performance, geometry, material, voltage,...
- Cell pack design / performance (Flow, thermal, etc.) coupling/integration



ALUMINIUM

Aluminlum Body design according to

- Main Structure definition
- Stamping & Formability
- Welding
- Riveting
- Clinching

INTEGRATED PROCESS FEM-CAE-CAD

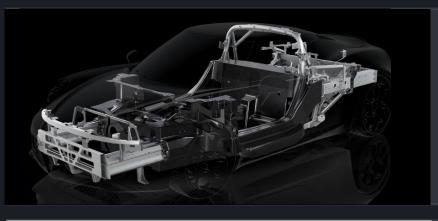




COMPOSITE CARBON FIBER

Composites and Carbon fiber application on Body

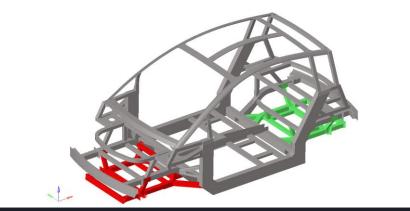
- Main structure definition
- Shaping
- Joining method



SPACE FRAME BODY

Space Frame body design

- Structure definition
- Multi material integration
- Multi technology integration
- Joining method



TUBOLAR CHASSIS

Tubolar chassis body design

- Strcture definition
- Formability
- Multi shape integration
- Joining method



RAPID PROTOTYPING

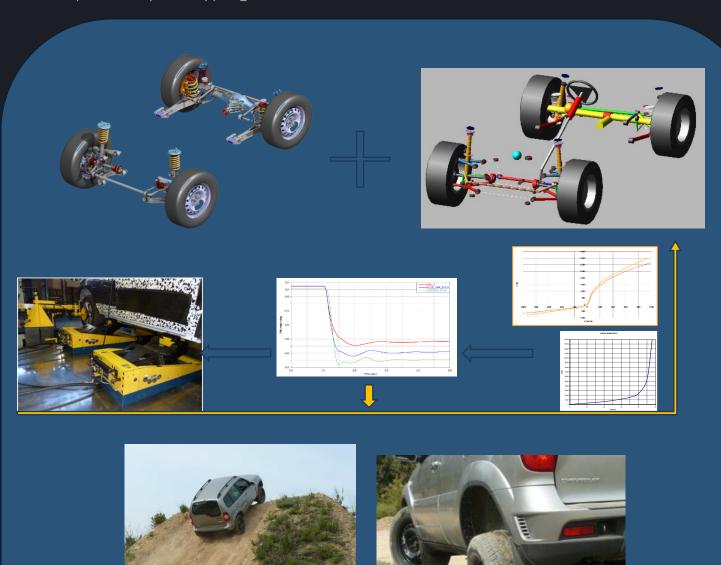
Rapid prototyping applied on body design

- Research on new 3D print application on Body
- Structural honeycomb applications
- Integration with traditional design
- Joining method



SUSPENSION DEVELOPMENT

- Targets Definition/Analysis: R&H, Comfort, Performance,
 Safety
- Configuration and Geometry Development
- Parts Definition
- Requirements deployment to Components
- Multibody Analysis development and validation
- Suspension prototyping on Vehicle

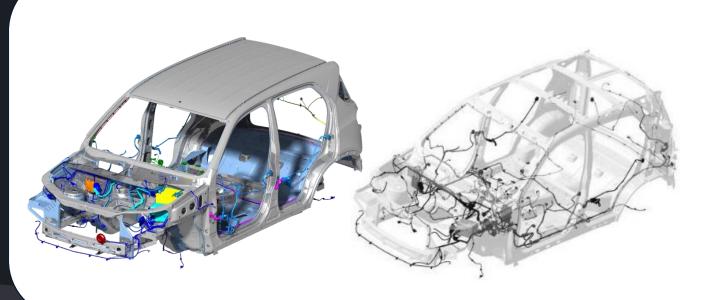


ELECTRIC & ELECTRONICS DEVELOPMENT

- Embedded electronics system
 Electronic control system
 Supervision systems
 Data acquisition system
- Applied methodologies
 Analysis and feasibility study
 Hardware and software components selection
 Hardware prototypes engineering
 Software development
 System architecture development
 Simulation models design and implementation
 Control system development
 Code Generation and Integration for ECU
- Model development and simulation

 Matlab Simulink model design of control systems,
 diagnosis systems, signal analysis
 Customization and development of rapid prototyping
 systems for code generation directly from simulation
 models
 - Target development for real-time simulation systems

- Safety requirements/specification definition
- Study and application of standard IEC61508, ISO26262, ISO25119, ISO13849
- Critical system events identification (PHA)
- Fault Tree Analysis (FTA) and Failure Modes and Effects
- Analysis (FMEA)
- Design and development of test & validation systems
- Hardware in the Loop
- System validation through test pattern specification
- Design of bench for automatic test and measure
- Functional testing and solution testing
- Design and development of wiring harness
- Synoptic design
- Schematics design
- 2D and 3D wire harness design
- For prototypes
- For mass production
- Creation of prototyping harness







VIRTUAL TESTING

PROTOTYPING and TESTING **VALIDATION & HOMOLOGATION**

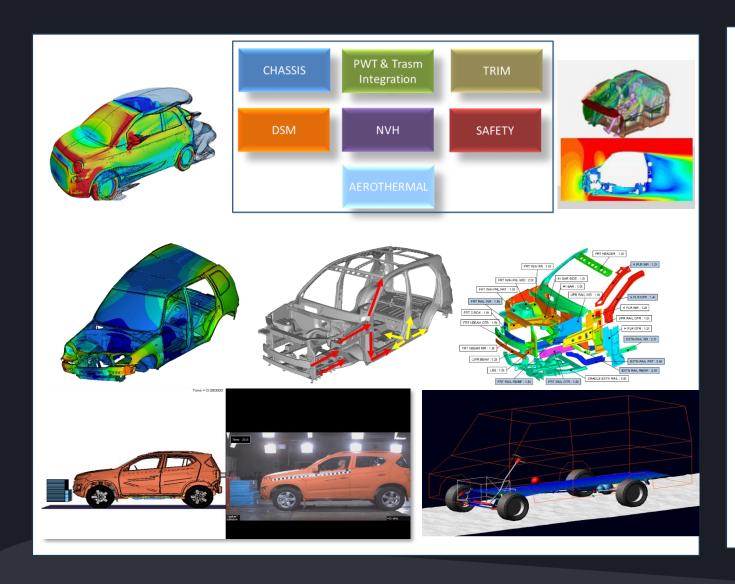
Virtual and Physical validation testing correlation DVP (Design Validation Plan) and support any testing phases.

- Static, NVH, Durability and Dynamic stiffness testing on Body in white & trimmed Body
- Static and Durability testing on closures
- Passive Safety testing
- Pedestrian Protection testing
- K&C, Drivability
- Fluid Dynamic testing

SIMULATION

A virtual validation plan starts with the vehicle concept and iterate with design and other departments till the testing validation on final vehicles (manufacturing issues included)

- Multi body
- Static Upperbody Closure Underbody
- Dashboard simulation
- NVH analysis & testing
- Fatigue simulation
- Fluid dynamic analysis for CX evaluation, ventilation, climate comfort, engine cooling
- Crash simulation
- Simulation of the bio-mechanical behavior of passengers using multi-body analysis









INSTITUTIONAL NETWORK

Blue Engineering is part of important Italian and European institutions, public agencies and associations







































RAILWAYS REFERENCES

Diverine Acquisa Market Antitiers, Qualifica Fe	La Direzione Ac mautemimento qualificat non L soggetti qualifi Qualifica Fornit rilevanti ai fini requisiti - che eve	ALSTOM Transport Sourcing - Prot.076591	AnsaldoBreda Pistoia 30/5/2007 Ns. rif. QSF/LTT/07.00122 La per resultati prestaza Tate m	o, Pistoia 30/5/2007 di Ns. rif. QSF/LTT/07.00122	La perman seguito, al ultimi due la perman resultati de prestazioni. Tale monito	ANSALDOBREDA Direzione Sistema Velcolo e S 51100 Pistola Via Ciriogiole 110/8 Tel. +39.0573.3701 Fax +39.0573.370292 Pistoja, 21 Marzo, 2003	Ansaldo Breda	Seed Leade Seed L	FIREMA Trasporti spis The Proposition of Calabra Alberta The Proposition of Calabra Alberta FIREMA FIREMA Spettile Spettile BLUE ENGINEERING S.R.L. MA Alberta D.D.
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QUALITY CERTIFICATIONS

Idea of quality moves every single thought, every source and every activity of ours. Our actual level of development and bases for future evolution are due to this propulsive thrust. Quality is all we want to show in every word and every image. Now the attempt is to prove our idea in facts. BLUE Engineering experience, knowhow and skills are fully expressed in the work committed from the customer.

BLUE Engineering is in your product.

BLUE Engineering is in innovations required by the market, is in highest reliability, is in economic corresponding to quality you duly demand.





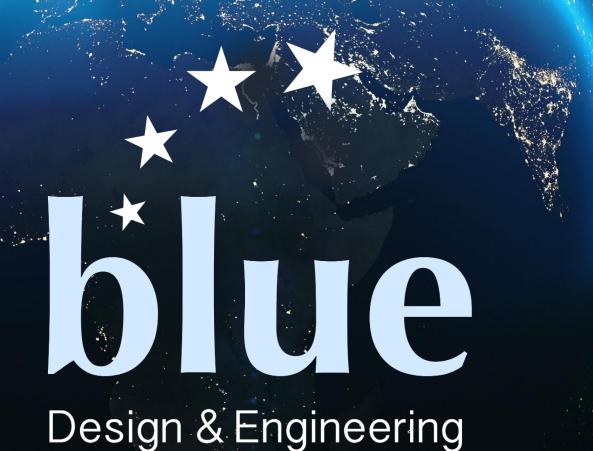


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THANKS FOR YOUR ATTENTION