



**YOUR SERVICE
COMPANY
SINCE 1968**





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17	STYLING
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THE COMPANY

Italdesign is one of the world's leading companies in the provision of development services for the automotive industry. The mission of Italdesign is to provide a wide range of services dedicated to the development of new vehicles and industrial products, ranging from styling to engineering and from prototypes manufacturing to testing and validation.

With its fifty-year experience the company, founded in 1968 by Giorgetto Giugiaro and Aldo Mantovani, works closely with car makers starting from the first product definition to the start of production. Companies in the sector can benefit from Italdesign's consultancy services for turnkey projects, covering all the phases through the development of styling, concept and vehicle architecture, series engineering, simulation, prototyping, testing and final production tuning.

In addition, Italdesign can provide services for shorter projects covering only a part of the overall vehicle development cycle.

50 YEARS
of success

over
100 CARS
showcars

over
300 CARS
production
models

over
60 MILLION
production vehicles launched onto the market
by worldwide leading car makers



THE COMPANY

Italdesign has been working with all of the most important OEMs worldwide over the past 50 years, being recognized as a very innovative partner in terms of styling and engineering.

Among the major OEMs, Italdesign has been working in Europe with VW Group (brands VW, AUDI, Seat, Lamborghini, Škoda, Porsche, Bugatti, and Bentley), BMW Group (brands MINI and BMW), PSA Group (brands Peugeot and Citroën), Renault-Nissan Group, FCA Group (brands Fiat, Lancia, Alfa Romeo, Maserati), Ferrari, Iveco, Ford, Lotus, Saab, and Volvo; in Japan with Suzuki, Toyota, Lexus, Subaru, Mitsubishi, Daihatsu, Isuzu, Mazda, and Nissan.

Italdesign has significantly supported the emerging OEMs in developing new vehicles, first in Korea until the 1990s with Daewoo, Hyundai, and Ssangyong, and then in China with FAW, CMC, Chery, Qoros, Changfeng, Geely, Dong Feng, Brilliance, CNHTC, and in South East Asia with Proton (Malaysia).



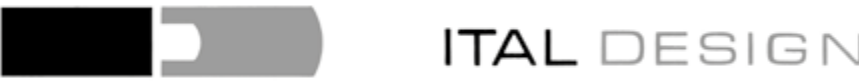
HISTORY OF OUR LOGO

1

13 FEBRUARY 1968

Giorgetto Giugiaro and **Aldo Mantovani** launch their own business. The new Studio provides its services directly to the car industry offering a professional team with experience in the creative and engineering fields, construction of models and prototypes, design of dies and tooling for industrialisation, as well as advice on production methodology. The company's name and logo are intended to be easily identified and to convey its distinctive credentials and mission: **Ital Design**.

On the graphic level, in the first logo the 'I' and 'D' are aligned with the Ital Design lettering: **Ital Design**



2

1969

The logo very soon undergoes a transformation. The 'I' and 'D' are re-stylised and the **Ital Design** wording is positioned beneath the two letters set in 'block type'. The letter 'D' is defined using the vertical 'sticks' for the first time. It starts off with 17.



3

1987

The company name changes to Italdesign and so the logo also contains the two combined terms. The 17 vertical 'sticks', which create issues when the brand is used in a reduced format, drop to 13. These still exist today and relate to the date the company was set up.



4

1999

The Company becomes increasingly prominent on the world business stage, with 1,100 employees and operating sites in Spain, France, Germany, Japan, the USA and China. In November 1999, it is listed on the Italian Stock Exchange and chooses the wording **Italdesign Giugiaro** to identify itself.

The new logotype reflects this change. There is a radical change of the brand with the inscription "Giugiaro" under the two stylized letters.



5

2016

A new graphic look for the logo that has presented and accompanied the brand worldwide since its inception. The logo's graphic evolution pays tribute to Italdesign Giugiaro's roots, those planted by Giorgetto Giugiaro and Aldo Mantovani in 1968 to create a research and development centre studied, observed and highly respected by design and engineering professionals throughout the world. The grapheme 'G', which is combined with the 'I' and 'D' featured in the logo since 1968, alludes to GIORGETTO GIUGIARO, the very soul of the company and icon of industrial design. The lettering spells out 'Italdesign', confirming the company's determination to perform an activity far more complex than 'styling', or merely defining a model's aesthetics.

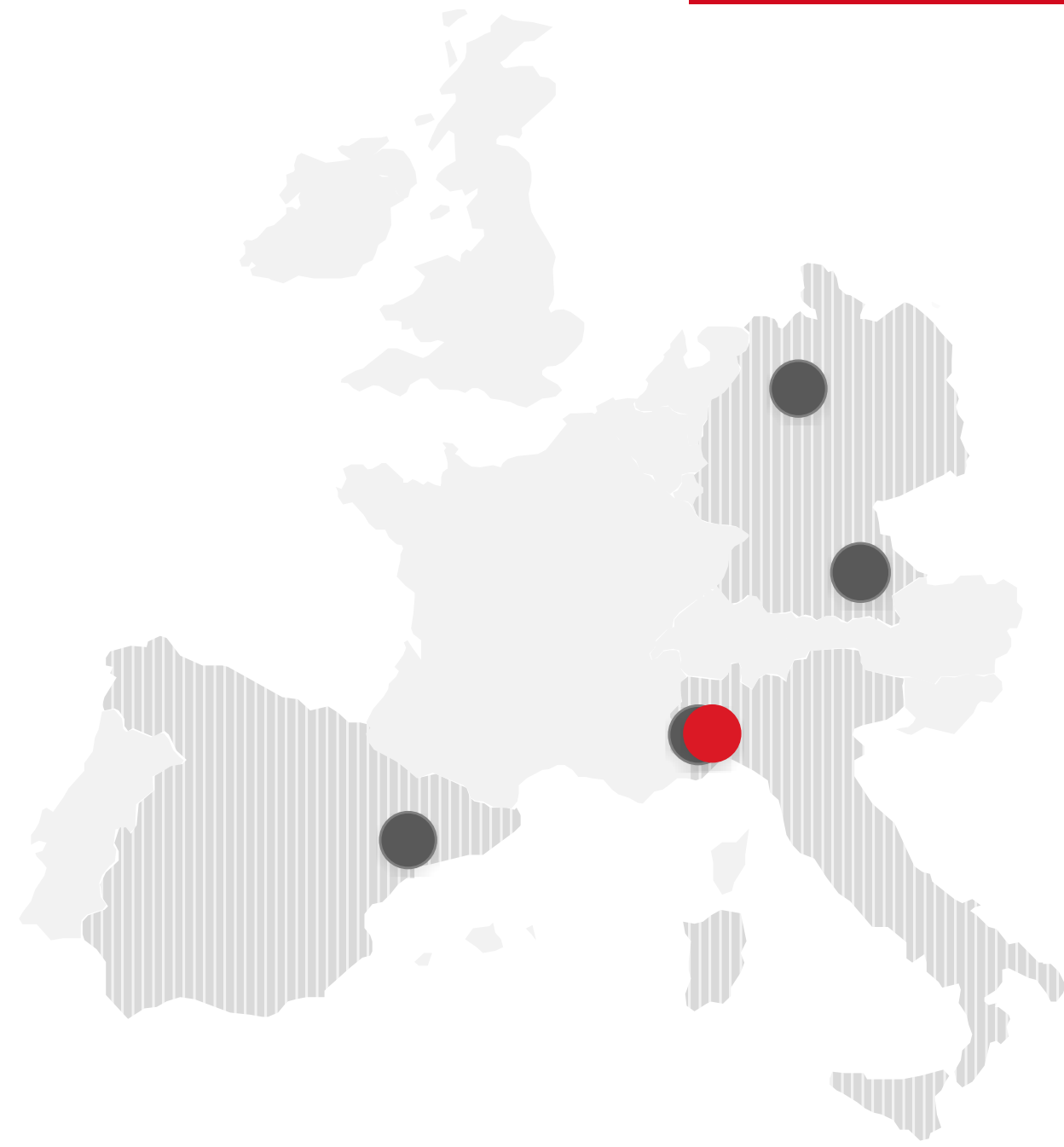


It adopts the British interpretation of the term 'design', whereby creativity and development are joined together in the design process. 'Italdesign' thus refers to a melting pot of skills, a place where creativity, design methodology and technology meet, a symbol of innovation and quintessential Italian ability to make things and make them well. This Italian heritage is enhanced by the powerful sign of the tricolour.





WHERE WE ARE LOCATED



ITALDESIGN GIUGIARO S.p.A.
(Moncalieri, Turin, Italy)
STYLING - ENGINEERING - PROTOTYPING - TESTING
AND VALIDATION - SHOWCARS

OPERATING COMPANIES

ITALDESIGN GIUGIARO NICHELINO
(Nichelino, Turin, Italy)
PROTOTYPING - ENGINEERING

GIUGIARO DESIGN
(Moncalieri, Turin, Italy)
INDUSTRIAL DESIGN

ITALDESIGN GIUGIARO BARCELONA
(Barcelona, Spain)
STYLING - ENGINEERING - PROTOTYPING
INDUSTRIAL DESIGN

ITALDESIGN GIUGIARO DEUTSCHLAND
(Heinenkamp - Wolfsburg, Ingolstadt)
ENGINEERING - TESTING AND VALIDATION





SERVICES



styling



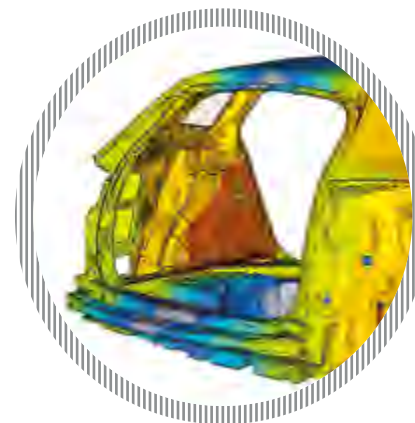
concept development



showcars



series engineering



calculations



proto & model manufacturing



testing and validation





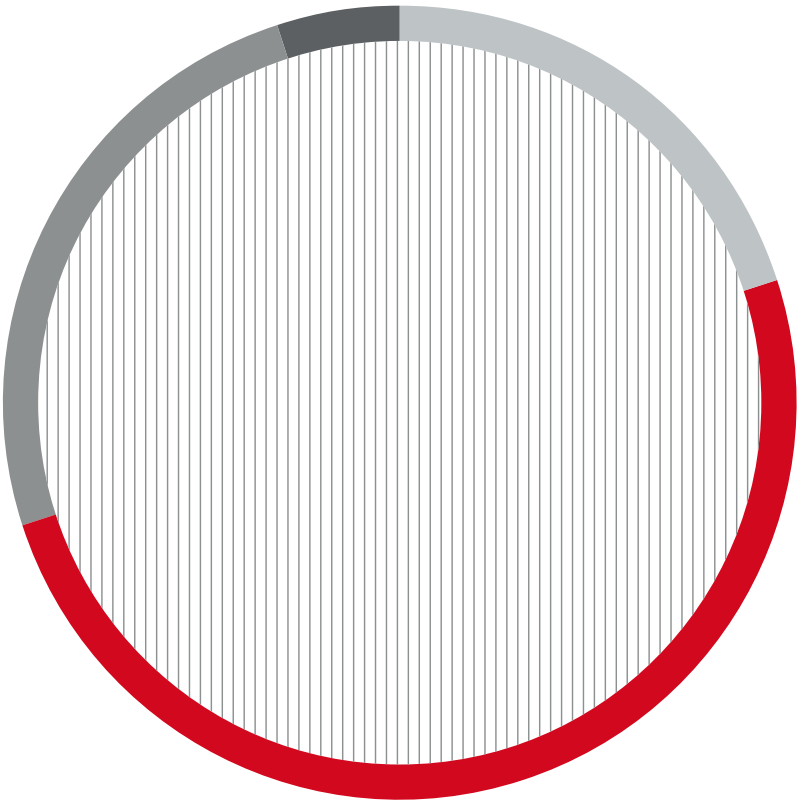
FACTS & FIGURES



1000 Employees Workforce
67.000 sq. mt. Building
(HQs, Pre series center, Logistic site)
4.000 sq. mt. Building (Barcelona)
998 Workstations - Cax
15 NC Milling machines
16 Measuring and Scanning systems

8 Presses
3 3D Laser cutting Robots
2 Virtual Reality Centers
2 Flexible robotized cells
1 Photogrammetry
5 Rapid prototyping machinery (3D printer)
1 Car gallery

MAIN FIGURES - 2015



REVENUES BY BUSINESS UNIT

20%
STYLING

50%
ENGINEERING

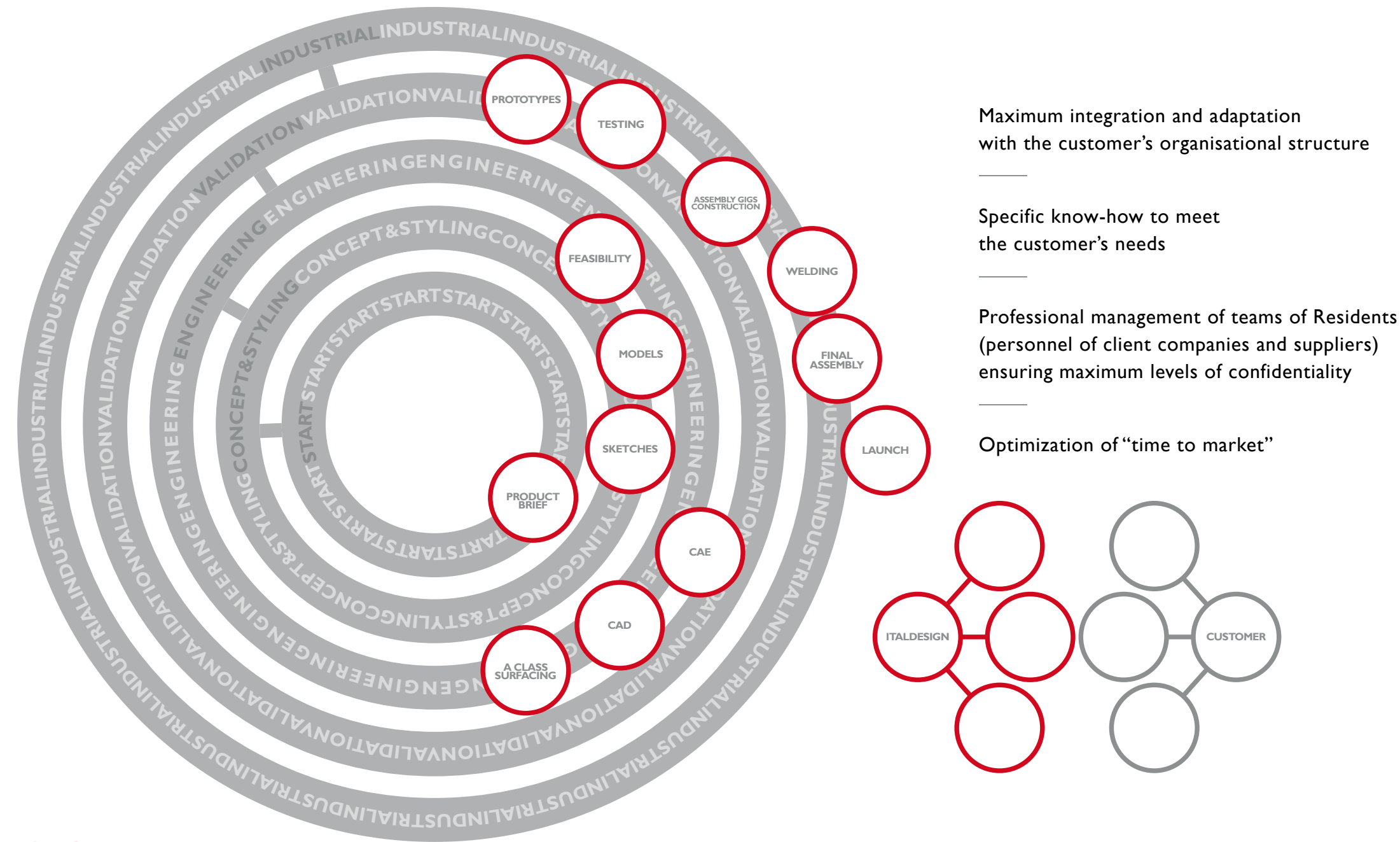
25%
WORKSHOP

5%
INDUSTRIAL
DESIGN





CUSTOMER ORIENTED

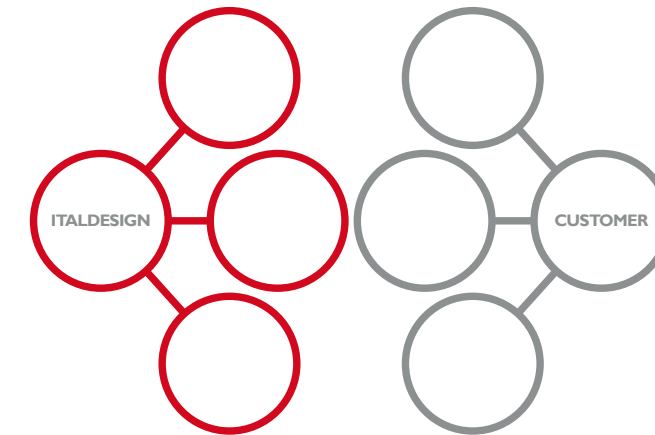


Maximum integration and adaptation with the customer's organisational structure

Specific know-how to meet the customer's needs

Professional management of teams of Residents (personnel of client companies and suppliers) ensuring maximum levels of confidentiality

Optimization of "time to market"



TURNKEY PROJECTS

Turnkey projects cover all the phases from the first product definition to the start of production, through the development of styling, concept and vehicle architecture, series engineering, simulation, prototyping, testing and final production tuning. In detail:

STYLING

Styling research
CAS Virtual Models (ext/int)
Physical models (ext/int)
Colour & trim and Graphics & Interfaces

CONCEPT

Packaging & Ergonomics
Architectural definition & target setting
Styling convergence

SERIES ENGINEERING AND TESTING

Surfacing (A-class)
Body Engineering
Interior Trim Engineering
Aerodynamics, HVAC & Thermal management
Electrics & Electronics
Product & Process Integration
Simulation
Vehicle safety
Complete Vehicle development
BOM
Cost Engineering

PROTOTYPING

Model
Dies & Parts Manufacturing
BIW welding
Protos assembly
Quality check and electronic functionality validation

PROJECT MANAGEMENT

Project Management is the key role that integrates, customizes and manages the overall Development Process through efficient team work organization and effective planning.

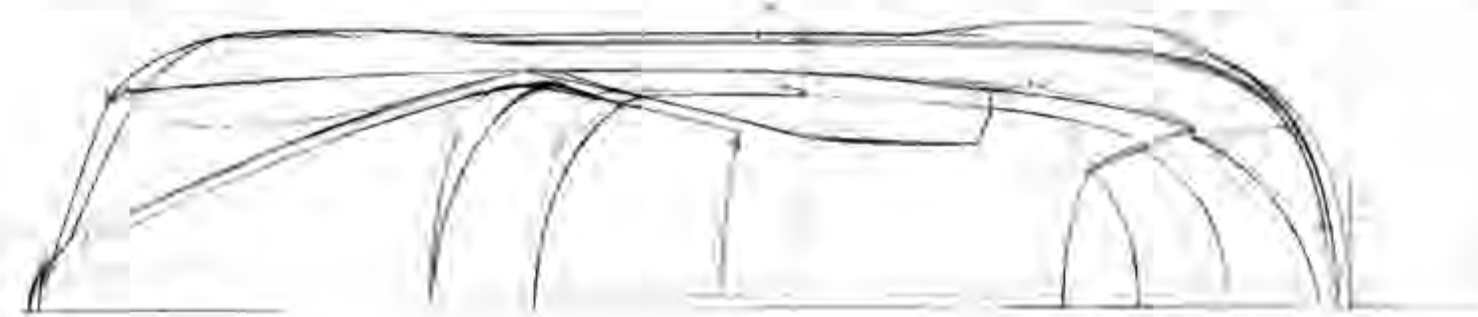
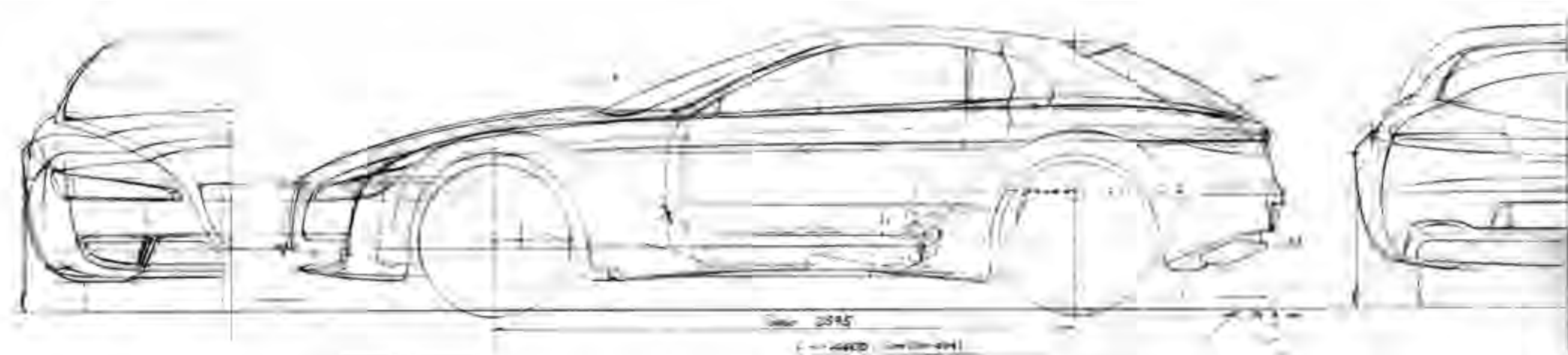
Project Management steers the overall Vehicle Integration Process to guarantee the achievement of vehicle targets and is the main interface with the customers.



STYLING

Stylists interpret the functional aspect of design, creating forms and volumes that meet production needs. There is no aesthetic solution that is not also implicitly a technical and design solution, aimed at devising cars that can be mass produced.

Starting with the customer's brief, styling research prepares freehand sketches and drafts both for the interiors and exteriors, showing the positions of the vehicle's various components. The research study continues with the development of 3D proposals using software such as ALIAS, ICEM and MAYA; these three-dimensional virtual models, which also allow animations, interactive management and full scale moving simulations, are used to directly produce the styling models by means of numerical control millers that process the virtual surface data through CAM applications.









STYLING



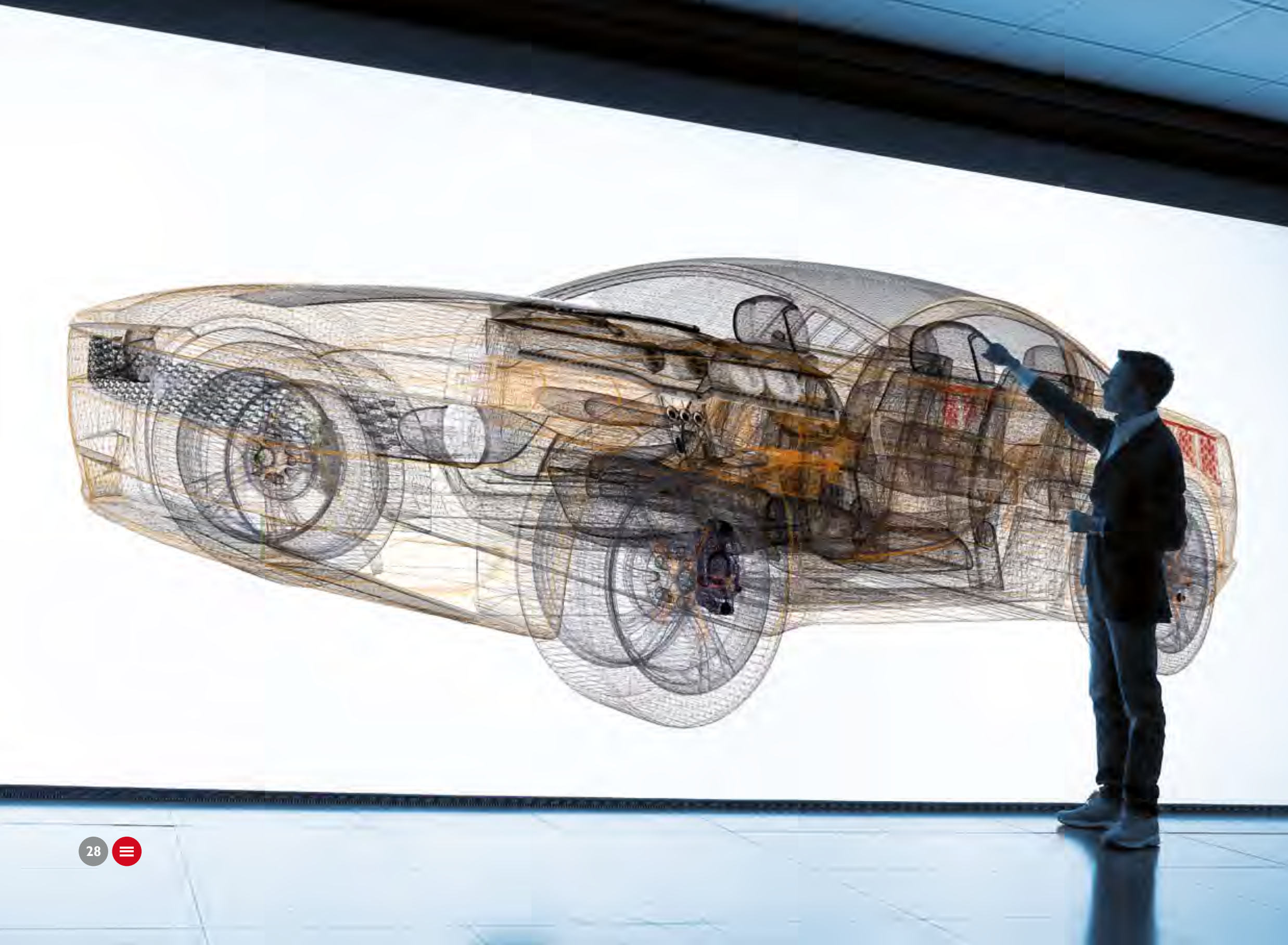
The finishing and modification work is instead left to the dexterity of the modellers, who add craftsmanship to technology, paying attention to the minutest detail. To allow the best design solutions to be studied, the models are produced in their natural size and with different materials: polystyrol, epowood or special resins. The models of interiors allow to assess both the design and the quality of the passenger compartment's habitability and comfort. Minimal changes to the model are shown in 3D to ensure alignment with the virtual model.



VIRTUAL REALITY CENTER

The methodology applied by Italdesign in terms of both creativity and design, structural calculations and validation is continuously updated. Thanks to the evolution of electronic technologies, Italdesign was the world's first service company and the first independent styling and development studio to build a Virtual Reality Center - today there are two - and offer creative and styling services using virtual reality on a 1:1 scale.

This allows a complete aesthetic research project to be developed and the results presented to the customer in just a few weeks. The results achieved in this way provide customers with evaluation criteria similar (and broader in certain aspects) to those offered by a view of a three dimensional model. The first Virtual Reality Center, completed in 1999, is now equipped with Barco SIM7 digital projectors with a total resolution of 3682 x 1536 pixels and latest generation workstations.



VIRTUAL REALITY CENTER

The second higher-performing VRC, inaugurated in 2006, was radically updated in January 2015 and today features two Barco Galaxy 4K projectors with a resolution of 4096 x 2160 pixels each with 23,000 ansi lumens and a 7 x 3 metre Monolite Power Wall glass-base screen.

The Barco XDS software manages 4 latest generation Workstations and three sources. All controllable via Creston wireless touch screen remote control, with a console monitoring system.

The center is equipped with an Ecler 5.1 ch. professional audio system (design by Giugiaro Design). Two further 4K 65 inch monitors are located to the side of the room, and any source, even if not projected, can be controlled and viewed on the console, using professional monitors. A proprietary Virtual Taping system is used to interact in real time with the 3D rendering and modelling software.

Simplified system management allows each working group participant - designer or draughtsman - supported by specific IT expertise, to work on the object projected. It is hence possible to comment on, manipulate, magnify, reduce, rotate, or modify the views, change the colours of surfaces, the setting and the finish features. The center provides a great opportunity to create an ambience that is shared simultaneously by specialists in the various functions who can examine how the project is evolving and share in its developments. The technologists can visually assess the engineering development results at the same time as the styling evolution is ongoing, making their own contribution at a planning stage well in advance of actual model construction.

The Virtual Reality Center, developed primarily to develop creativity, has proved itself to be a work tool that has become part of the day to day design process and has been absorbed effortlessly into the company workflow, through the application and development of special software.



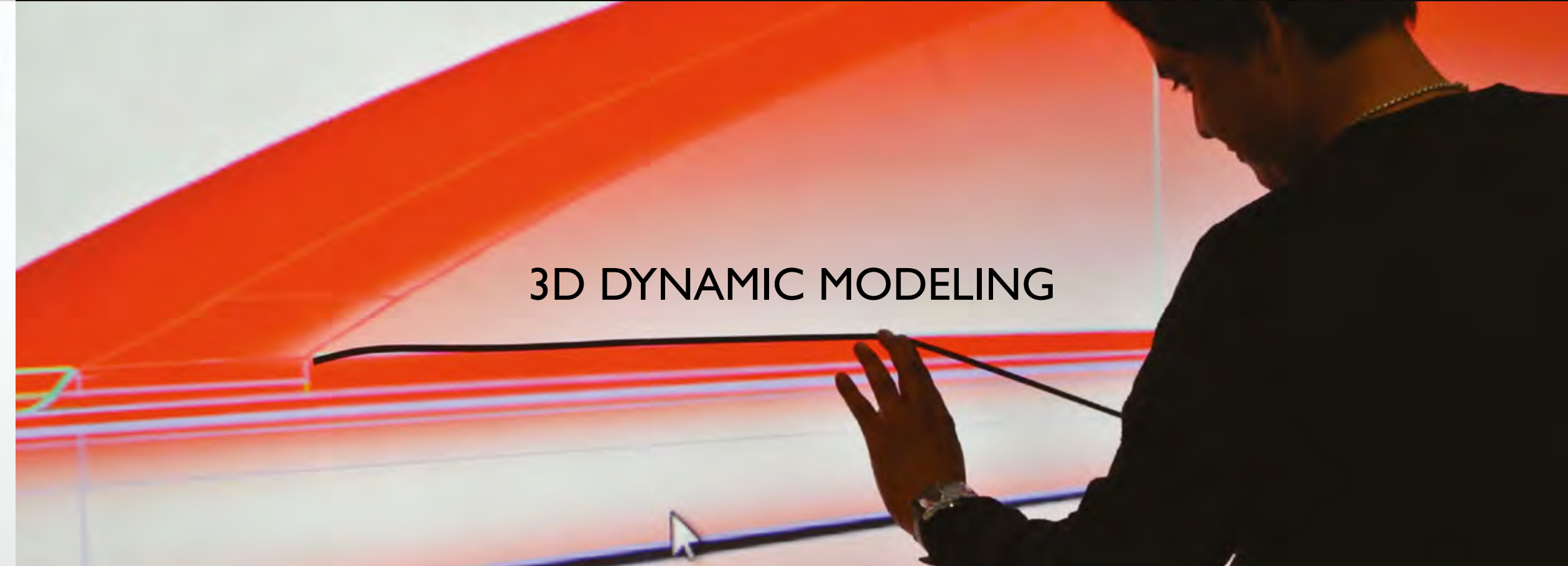
RENDERINGS FOR DESIGN REVIEW / COMMUNICATIONS DEPT.



VIDEO CREATION FOR GRAPHIC & INTERFACE



INTERACTIVE
REAL TIME PRESENTATIONS
/ IMMERSIVE (OCULUS)



3D DYNAMIC MODELING



ENGINEERING

The Engineering development starts with the definition of the vehicle packaging (wheelbase, track, main external and internal dimensions) that represents the first technical input for the overall vehicle development. The starting point is the platform complete of powertrain, chassis and mechanical components and systems normally supplied by the customer.

Engineering works simultaneously with Styling thanks also to the extensive use of the Virtual Reality Center, using CAD,CAS, CAE and DMU technologies. As soon as the sketches and renderings are completed, a team of engineers carry out simultaneous verifications on CAS surfaces to verify the technical feasibility and coherence with the vehicle targets.

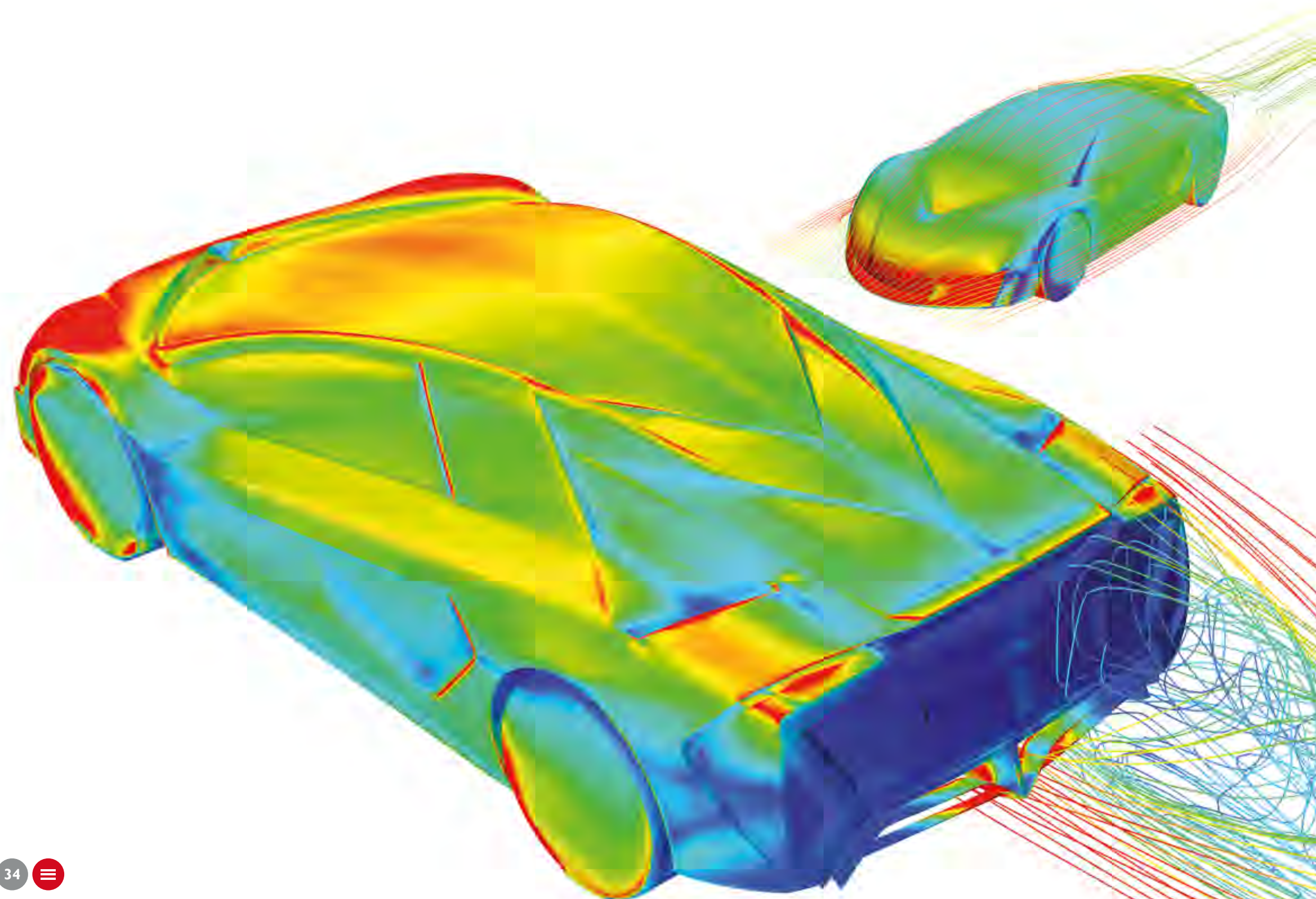
In the first phase the Vehicle Architecture or Concept is fully developed, defining the architectural solutions coherent with the vehicle targets, optimizing the internal ergonomics and steering the styling convergence process in integration with Styling. Aerodynamic simulations and tunnel tests allow the styling surfaces to be optimized ensuring that aerodynamic targets are achieved. The manufacturing constraints and requirements are taken into account to guarantee the technological feasibility in the production plants.

The integration between Engineering and Styling, with the simultaneous exchange and full sharing of information and data (common database), allows the optimization of the development times and costs.





ENGINEERING



At the end of the concept phase, all the new vehicle systems and components (body, closures, exterior trim, interior trim, HVAC , harnesses, electric and electronic systems ...) are fully developed in detail first for prototypes manufacturing and then for the series production. Italdesign works in full integration with the customer Process Technology and Manufacturing to ensure that the technical solutions are feasible and can be manufactured and put into production, examining their compatibility with the production methods and tooling/equipment used in the production plants. The different component suppliers are fully integrated and managed according to the vehicle scheduling plan agreed with the customer. The verification of the geometrical integration of all the different components and systems proceeds in parallel with the vehicle development from very early stages. The Virtual Car is in real time continuously assembled and updated to check with DMU tools that the geometrical constraints and targets (clearances, gaps, assembly ...) are fulfilled.



ENGINEERING

CONCEPT DEVELOPMENT

Packaging & Benchmark
Ergonomics; virtual and real validation
Architectural definition & target setting
Styling convergence

SURFACING (A-CLASS)

Exterior
Interior

BODY

BIW
Closures
Bumpers
Exterior Trim

INTERIOR TRIM

Instrument Panel and central console
Doors trim
Greenhouse
Trunk
Seats

AERODYNAMICS, HVAC & THERMAL MANAGEMENT

Ventilation/defrost
Engine cooling and thermal mngt
Aerodynamics & Aeroacoustics

ELECTRICS & ELECTRONICS

Harness & Package
Electric diagrams
EE components installation
Lighting
Infotainment components
Switches

PRODUCT & PROCESS INTEGRATION

Virtual Car (DMU)
Virtual Proto (workshop assembly)
Geometry: tolerance chains
Stamping simulations
Assembly sheets
Proto: Jigs & Fixtures

BILL OF MATERIAL

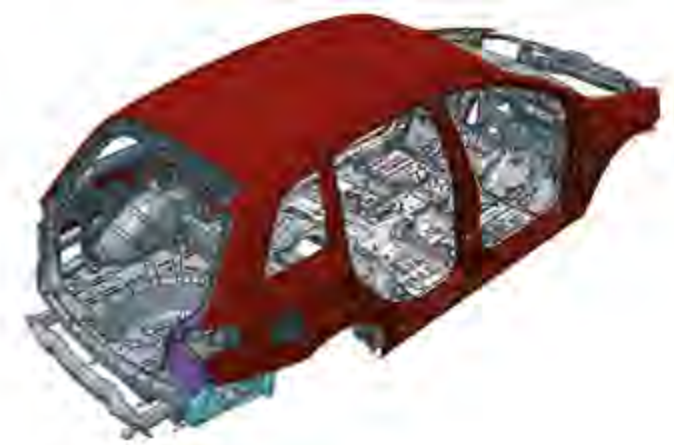
IDG and Customer PDM
Release of data at project milestones

COST ENGINEERING

Design to cost
Target costing
Cost monitoring

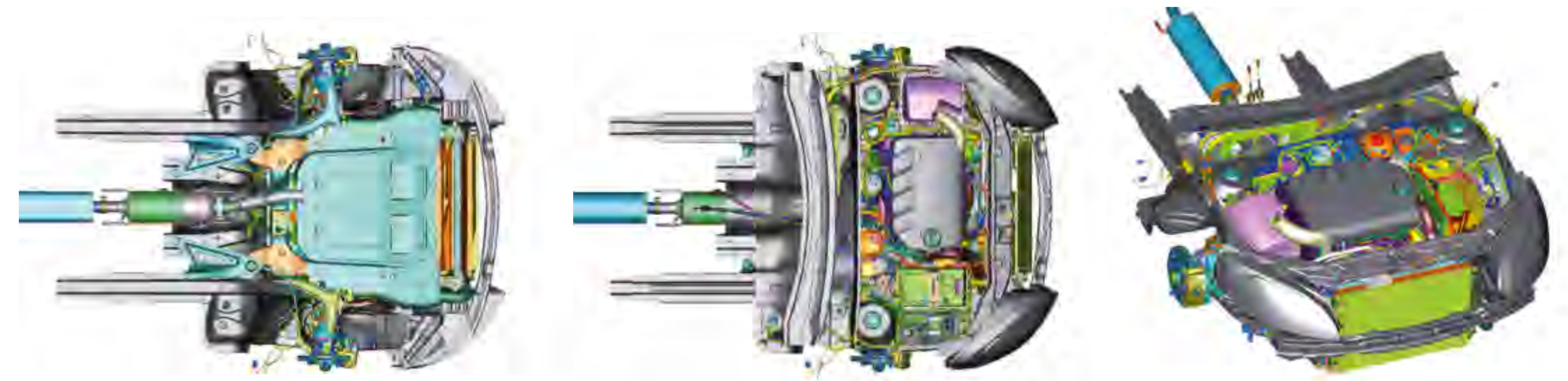
PROJECT MANAGEMENT

Vehicle development management
Vehicle integration management
Project budget management
Project Team Management
Project scheduling
Project monitoring (Design review)
Suppliers integration
Customer integration





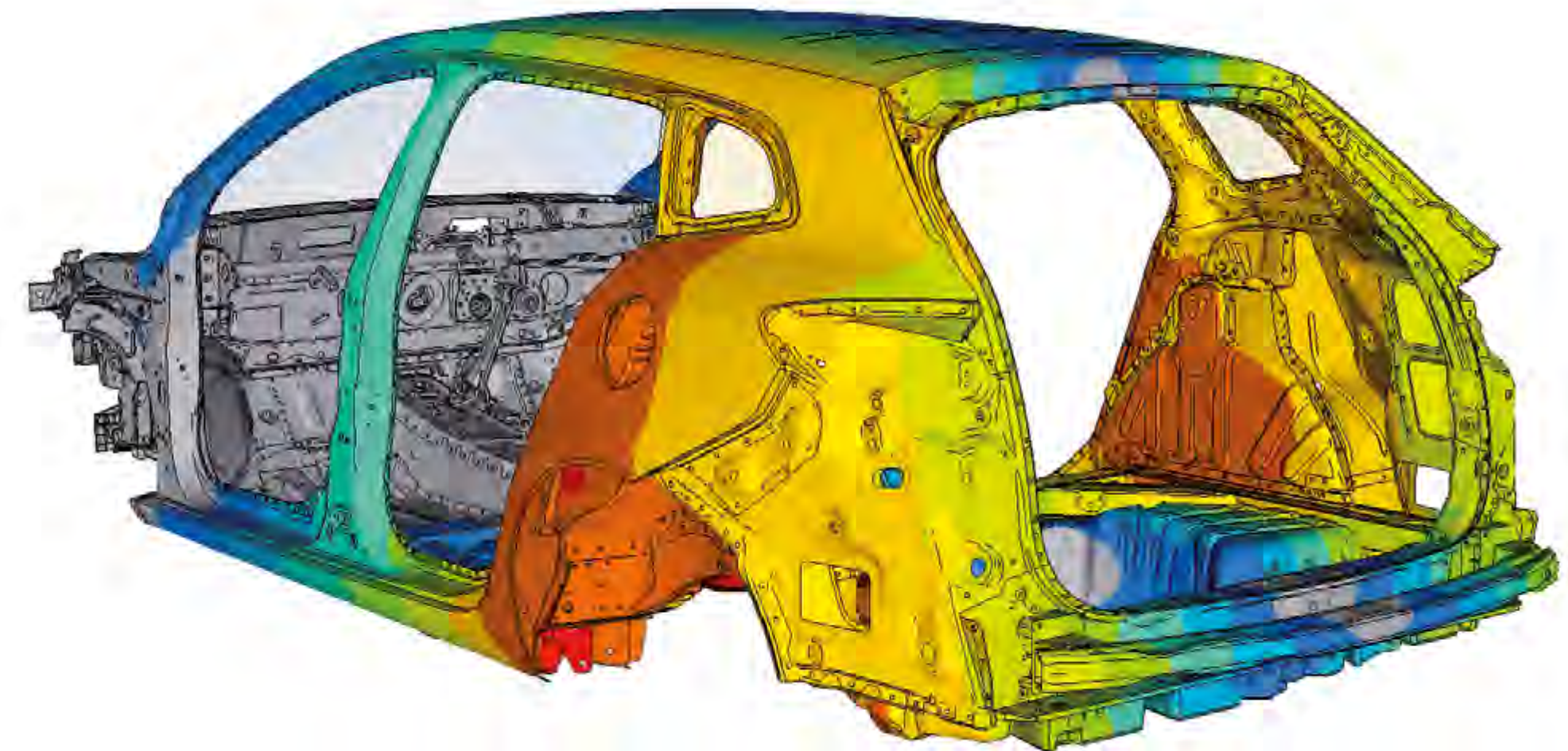
CALCULATIONS



CAE Engineers (Computer Aided Engineering) work in parallel with CAD Engineers to support from the early stages the engineering choices and to guarantee the vehicle functionality, the required performances and the compliance with legislation constraints.

The use of more and more sophisticated hardware and software allows to simulate all the difference tests for components and systems and for the overall vehicle, guaranteeing their functional integration.

Italdesign's expertise in simulation allows to optimize the development timing and costs.



- | | |
|---|----------------------------------|
| Static stiffness (BIW/closures/trim) | Low speed crash |
| Dynamic stiffness (BIW/closures/trim/ trimmed body) | Pedestrian protection |
| Local/global stiffness | Impact on interior |
| BIW Durability & Fatigue | Restraint system development |
| Acoustics/NVH | Air conditioning and ventilation |
| High speed crash | Air intake and cooling |
| Insurance crash | Aerodynamics |



PROTOTYPING

Before starting construction of the costly equipment needed for mass production, it must be validated on fully significant prototypes that all the design parameters have been met. Italdesign is able to ensure the performance and management of complete prototype phases, producing the metal sheet parts in-house and managing the procurement of all the components required in an integrated way. The integration between Engineering and Prototyping allows a fully significant proto sign-off with a transparent and effective data release for proto tooling.



PROTOTYPING



Various methodologies are used for this activity, creating dies able to make just a few units or more complex equipment that can produce a small series of parts, according to need. The quality of the parts produced in this way is very high, the same as that of parts mass produced with definitive equipment.

Pressing is carried out with hydraulic presses, whilst trimming and cutting are carried out by laser cutting robots and only rarely manually. Sophisticated tactile or optical control systems check the dimensional parameters during each prototype construction phase. For the metal sheet working of prototypes Italdesign has welding lines and a robotised cell for laser welding and brazing, so as to reproduce the customer's definitive production cycle, making the prototypes significant for the safety, fatigue and torsion tests.





PROTOTYPING



Once the prototype BIW has been completed it goes through the paint cycle and reaches the mechanical assembly and finishing lines. During the assembly phases, all the onboard functions and electronics are checked; the brake system is loaded and tested. Before delivery, each test prototype is verified on the track and approved through a rigorous inspection protocol.

Master models	Rapid prototyping
Management of the car's complete bill of materials for each individual test object	BIW welding
Component procurement and logistics	Painting
Design and construction of dies and assembly lines for prototypes and similar series	Final assembly of the mechanics, engine, interior and exterior finish, electrical and electronic devices
Metal sheet pressing and laser cutting (steel, aluminium)	Electronic functionality check
Procurement of moulded plastic components for interiors and exteriors	Track dynamic check
	Final approval of test objects





TESTING AND VALIDATION

The functionality and the fulfillment of the performance targets are checked and optimized through the extensive testing of components, systems and vehicles, first on prototypes and then on pre-series and pre-production.

The tests are conducted both on the bench in laboratory and on the road in test tracks.

The strong integration with simulation allows the optimization of the vehicle tuning till SOP.



TESTING AND VALIDATION

BODY AND TRIM

Static/dynamic stiffness
Local/global stiffness
Durability & Fatigue
Corrosion test

AERODYNAMICS

Wind tunnel test
Aeroacoustics
Soiling

HVAC & THERMAL MANAGEMENT

Engine cooling and refrigerant cycle
Cabin ventilation/defrost
Climatic wind tunnel test

VEHICLE SAFETY

Front crash
Side crash
Rear crash
Insurance tests
Low speed impacts
Restraint system
Pedestrian
Occupant protection
Active safety

ELECTRICS & ELECTRONICS

Functionality tests on the bench
ECU updating
Functionality tests on
static/running vehicle (start up)

COMPLETE VEHICLE

BIW modal analysis
Acoustics/NVH
Squeak & rattle
Assessment of the complete vehicle on the road
Prototype and testing plan optimization









SHOWCARS





PRODUCTION CARS



THE COMPANY STYLING ENGINEERING PROTOTYPING TESTING AND VALIDATION **SHOWCARS** INDUSTRIAL DESIGN



INDUSTRIAL & COMMERCIAL VEHICLES AND BUSES



OUR GROUP CLIENTS



Commercial Vehicles



ŠKODA



OUR EXTERNAL CUSTOMERS



ITALDESIGN
IS CERTIFIED
ACCORDING
TO ISO9001
INTERNATIONAL
STANDARD;
CURRENT
CERTIFICATION
BODY IS BUREAU
VERITAS.





INDUSTRIAL DESIGN

Established in 1981 by Giorgetto Giugiaro, as a continuation of the design experience started in the seventies within Italdesign, Giugiaro Design has steadily grown over the years, leading a close-knit and highly qualified team of design and business professionals in line with international market trends and expectations and offering a user-centered functional design.

Headquartered in Moncalieri-Torino, Giugiaro Design operates worldwide also by means of its staff in Spain, Germany, UK, Netherlands, Turkey, Russia, China, Japan and Korea.

Product Design

Mobility

Home/Office Interiors

Corporate Identity & Branding

Packaging





SERVICES

In thirty-five years of experience, Giugiaro Design has achieved a solid know-how, while working in several fields and co-operating with national and international companies.

At the base of Giugiaro Design's versatility is the adoption of a working method suitable for any product and enabling to develop a project for the various possible fields of application, sticking to the same exacting approach. Thanks to the cutting-edge techniques used both in designing and in three-dimensional modelling, Giugiaro Design boasts competitiveness in the project development timing and hence in the time-to-market areas.



2D sketching



3D modelling



virtual reality
development



in-house 1:1
mock-up making

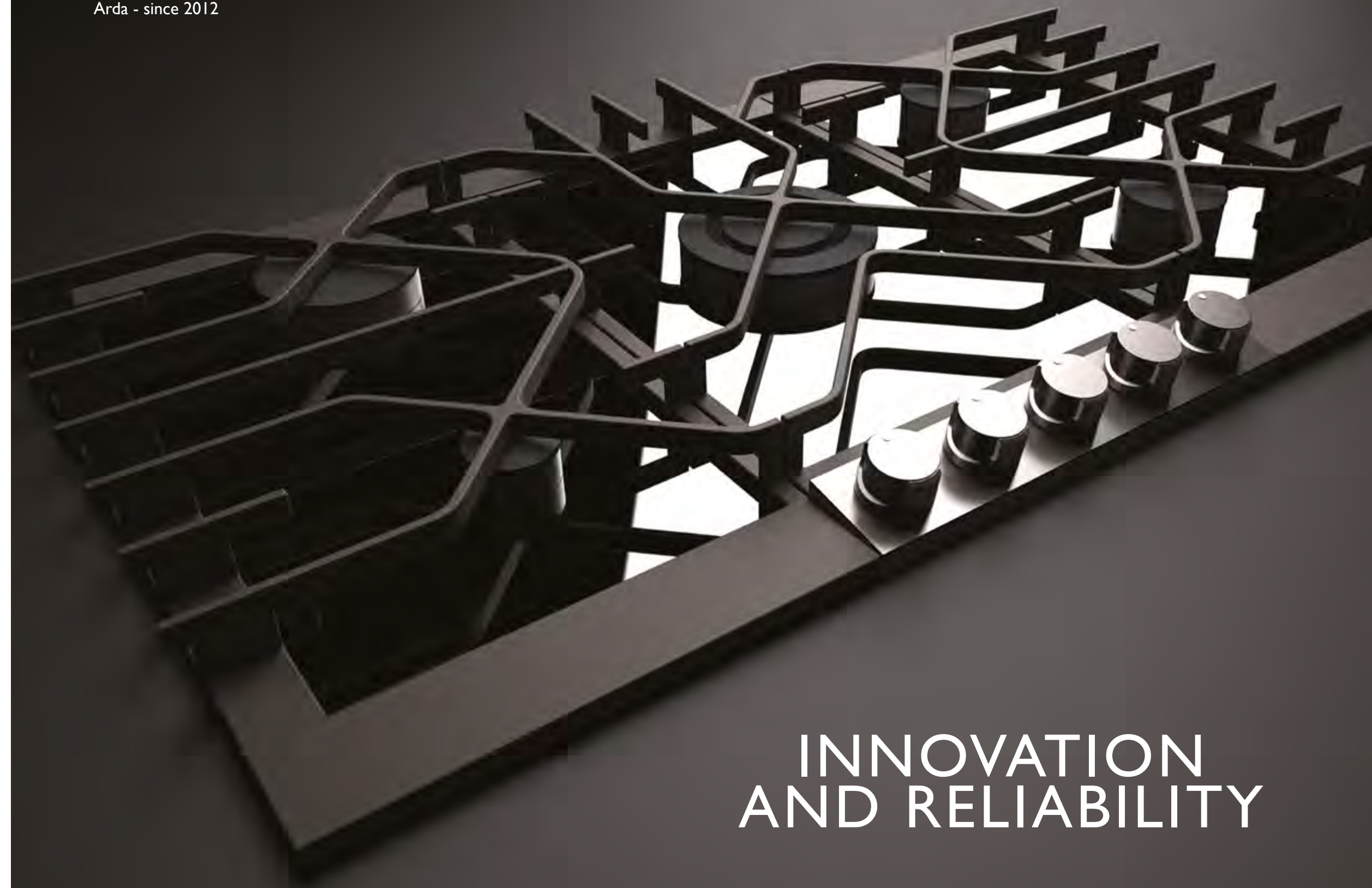


detailing and finishing



in-house tooling

Arda - since 2012



INNOVATION AND RELIABILITY

SMART APPROACH

Indesit - since 1989



Nikon - since 1980



SMOOTHING COMPLEXITY



Deutz-Fahr - since 1986



FORESEEING

WE THINK,
YOU PLAY

Molten



THE COMPANY STYLING ENGINEERING PROTOTYPING TESTING AND VALIDATION SHOWCARS **INDUSTRIAL DESIGN**



TRANSPORT



The rolling stock transportation sector has gained bridgehead importance in recent years. Giugiaro Design has developed a solid platform of expertise and capability in this field, whether in terms of rolling stock interior or exterior design, with a keen eye steered towards styling, premier materials, technologies and each and every detail making up a train. Accompanying the expertise gained in the transport sector is a string of projects focused around bikes, motorbikes, scooters, ATVs, three-wheelers, light four wheel cycles and yachts.

Aircraft interiors

Inter-regional trains

Sea crafts

Rolling stocks

Technical feasibility studies

2&4 wheels cycles

High-speed trains

Revamping

Motorcycles





COMFORT AND APPEAL

ATR 72-600 - CABINA ARMONIA





LATEST PRIZES



reddot design award





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