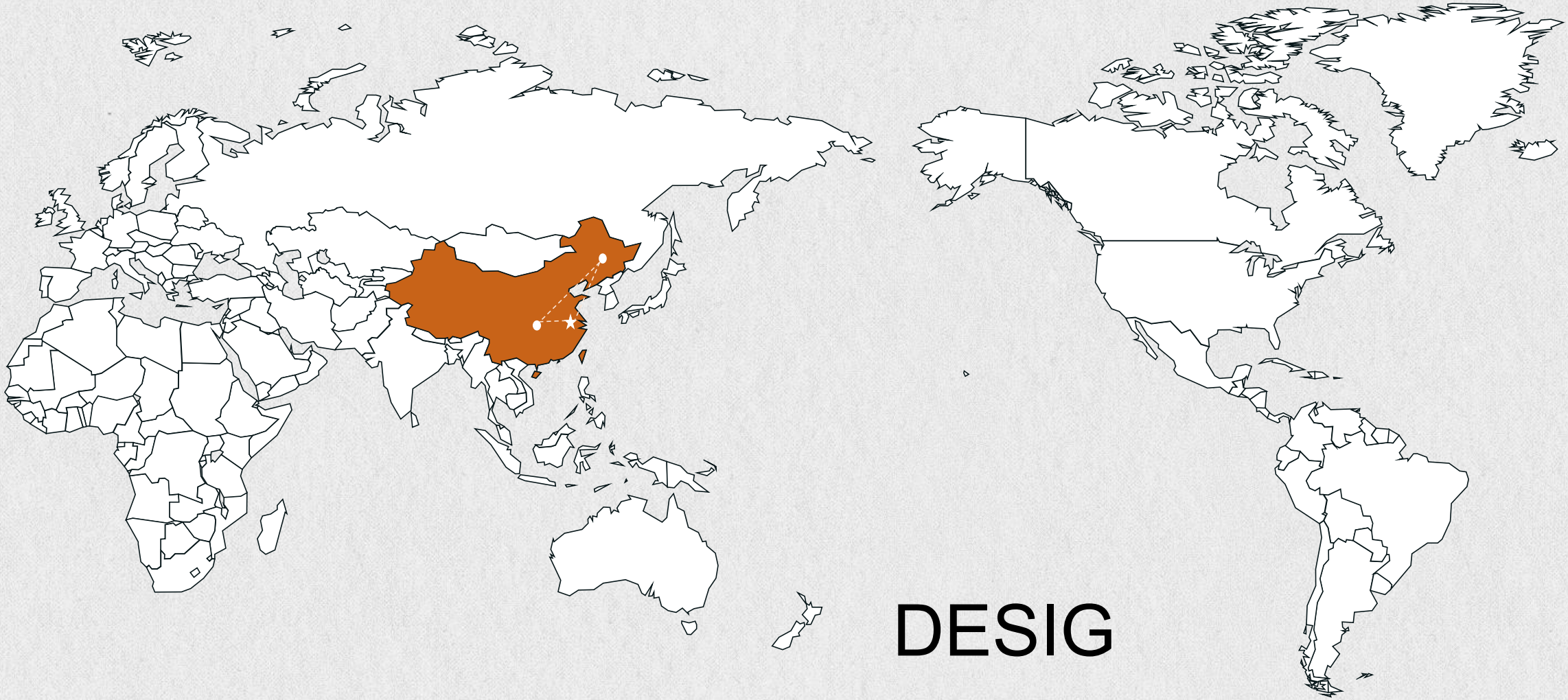
上普汽车技术(苏州)有限公司

UP AUTOMOBILE TECHNOLOGY(SUZHOU) CO., LTD



DESIG

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drives the future

1 Company profile 企业概述

2 Business Introduction 业务介绍

3 Successful case 成功案例

4 Cooperative partner 合作伙伴

企业概述
Company Profile

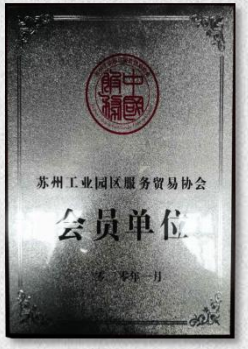
UP automobile Technology(suzhou) Co., Ltd is located in the national innovation and technology park, Dushu lake, suzhou park.The company was founded in 2014 with a registered capital of 10 million yuan. It has branches in Chongqing and Hefei.The company focuses on the technical research and development of vehicle, new energy vehicle and other transportation tools, and on the improvement of product perceived quality and innovative design.

上普汽车技术(苏州)有限公司座落在苏州园区独墅湖畔—国家创新科技园。公司成立于2014年，注册资金1000万元，公司核心成员由行业内有突出贡献的精英团队组成,现有重庆、合肥分公司。企业专注于汽车整车、新能源汽车等交通工具领域的技术研发；聚焦于汽车产品感知质量的提升及创新设计。

企业概述
Company Profile

Honor of the company：
公司荣誉：

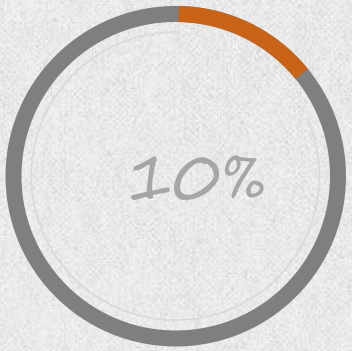
- CCTV brand
  央视访谈
- High-tech enterprise of jiangsu province
  江苏省高新技术企业
- Member of Suzhou Service Trade Association
  苏州服贸协会成员



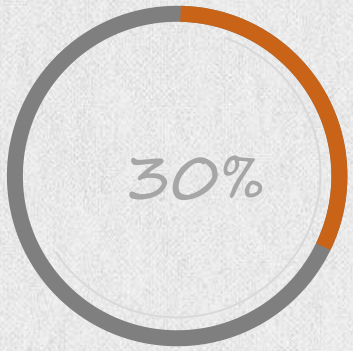
企业概述
Company Profile

The design team of the company is about 100 people, with 10% of styling designers, 30% of CAS & class A engineers, 40% of structural engineers, 15% of management team and 5% of administration and finance team. Our design team has provided design services for famous automobile engine plants such as SAIC Volkswagen, Dongfeng Nissan and Geely automobile, Chang'an automobile for many years and accumulated rich design experience.

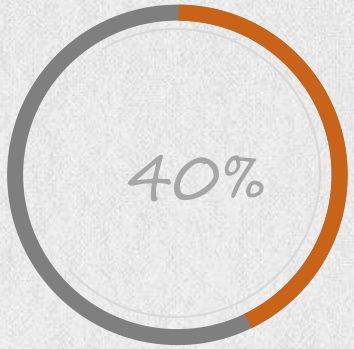
公司设计团队大约100人，其汽车创意设计师占比10%，汽车数字模型师（CAS&CLASS）占比30%，结构工程师占比40%，管理团队占比15%，行政及财务占比5%，我们的设计团队长年为上汽大众、东风日产、吉利汽车、长安汽车等知名汽车主机厂提供设计服务，积累了丰富的设计经验。



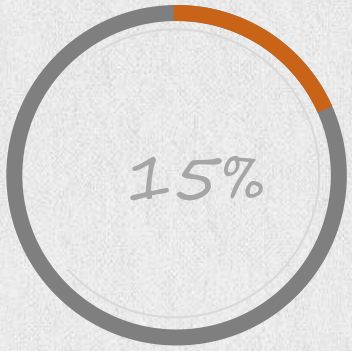
创意设计师



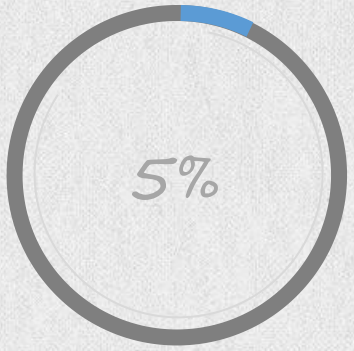
数字模型师



结构工程师



管理人员



行政人员

企业概述 --组织架构

Company Profile--organizational structure

董事会
Board of directors

总经办
General manager

造 型 部(styling)

Design consultation
styling
CAS/class A
model
HMI design

产品工程部(Engineering)

package
interior&outerior
body
Electronics
CAE

生 产 部(Production)

clay model
make sample(model)
carbon fibre products

综合管理部(management)

Administrative personnel
Train
logistic service
ITsecurity
Finance

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业务介绍--整车开发流程

Business Introduction--Vehicle Development Process

产品策划方案阶段
Product Planning Phase

产品工程设计与验证阶段
Product Engineering Design and Verification Phase

整车Vehicles

系统Systems 零部件Parts

投产启动阶段
Start-up Stage

PSI	SPS	PSC	HPS	OBD	AST	PLD	VDT	COP	VDC	ECC	TMR	TMS	SOP	FSP
项目启动	产品战略预先研究	战略确认开发决策	整车设计硬点确定	目标确认项目批准	A面提交	整车布置冻结	整车数据提交（工艺数模）	设计样本完成	整车数据发布（NC数据）	设计变更冻结	试生产	投产签署	量产开始	项目总结

业务介绍

Business Introduction

- 主要业务涵盖了汽车产品策划、汽车造型设计、汽车工程设计、生产工艺分析、CAE仿真优化、样车、展车、模型制作等。
  The main business covers automotive product planning, automotive creative design, automotive product engineering design, production process engineering analysis, CAE simulation optimization, prototype, exhibition, model making, etc.

- 线束设计。
  harness design

公司同国内大型主机厂、新兴互联网电动车企业、汽车零部件企业提供服务。
We provides services with major domestic manufacturers, emerging Internet electric vehicle enterprises and automotive parts enterprises.

产品规划	创意设计	产品工程	工艺分析	样车试制	前瞻技术
Product Planning	Styling Design	Product Development	Process Analysis	Prototype Trial Production	Prospective Technology

Product planning

产品策划

业务介绍

Business Introduction

- Prophase strategy
  - Product definition产品定义
  - User analysis用户分析
  - Vehicle type analysis车型分析
- 前期策略
- Forward looking design前瞻设计

Product definition产品定义

目标市场：
三四线以下低端消费升级新国标市场
三四线城市家庭第二辆代步车新国标市场
25-50岁已婚人群

核心亮点： 多功能	目标市场： 三四线以下低端消费升级新国标市场 三四线城市家庭第二辆代步车新国标市场 25-50岁已婚人群	**优势亮点：** 舒适、安全
属性定位： 打造中国新能源K-car （A00级）	**价值定位：** 有路权 多功能、大空间 时尚、科技	**利益定位：** 拥车成本低 使用成本低 高实用性 高性价比
亮点： 内外、造型 智联	**营销策略：** 1、快换及车电分离模式 2、购车金融支持 3、低价求量的定价策略 4、座位减法及加法思维宣传	**参考车型：** 欧拉R2 本田N-WGN

资源保障：快换、车电分离渠道资源及其下沉

流程保障：商企流程、质量管理流程、产品培训流程、营销及品牌策划及推广流程

Social , Market, Customer 社会、市场、客户

业务介绍

Business Introduction

- Prophase strategy
  - Product definition产品定义
  - User analysis用户分析
  - Vehicle type analysis车型分析
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- Forward looking design前瞻设计

User analysis用户分析

【People+Car+Environment】
3D analysis
【人+车+环境】3D 分析

People

人物角色

1人：
新手、熟手……
2人：
新手+儿童
熟手+儿童
新手+其他人
熟手+其他人
3人及以上：
新手+其他人
熟手+其他 人

人物行为

聊天
打电话
玩游戏
看书
听音乐
睡觉
补妆
玩手机
开车窗
吃零食

Car

车辆状态

车辆解锁车
辆启动
车辆发动
加速
减速
换挡
倒车
设置导航
导航中

导航变更
加油状态
空调设置
播放音乐
切换音乐
输入音乐
FM设置
车辆自检

车辆电量耗尽
充电状态
正常行驶
蓝牙准备
蓝牙连接
通话状态
雨刮器响应
车辆保养
车辆维修
车辆清洗
车辆故障

Environment

场所、时间、路况、气象

高速路
收费站
城市道路
隧道
抛锚位
道路边
充电桩
ETC收费站
4S店

景区
郊外
超市
商场
高速休息区
车站
菜市场
酒店
桥梁

拥堵
限行
交通信号灯
封路
单向通行
夜间
雨天
雾天
霜雪
阴天

业务介绍

Business Introduction

Product Planning
产品策划

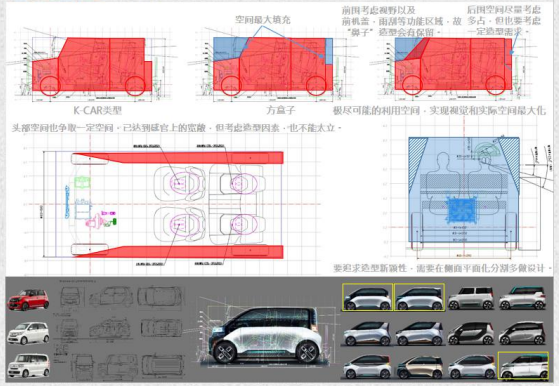
- Prophase strategy
- 前期策略

  - Product definition产品定义
  - User analysis用户分析
  - Vehicle type analysis车型分析

- Forward looking design前瞻设计

Competitive vehicle analysis竞争车辆分析

Ratio analysis车型比例分析



Keyword analysis关键词分析

Design direction设计方向

温润
舒缓
圆

方
硬朗
挺拔

Ultra Compact EV
Design
Proposals

MPV
多功能

NEW
Large Space

Styling design

造型设计

业务介绍

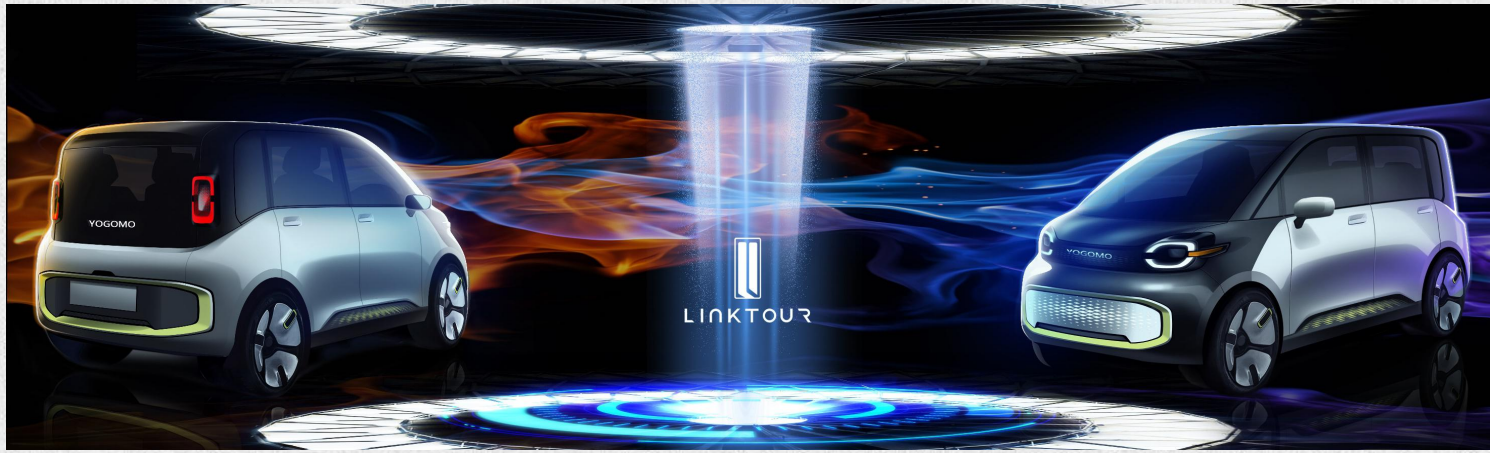
Business Introduction

Styling design
造型设计

- design sketch 创意设计
- CAS 数字模型
- Class A A级曲面
- Clay modeling油泥模型

◆ **design sketch**

Exterior



Interior

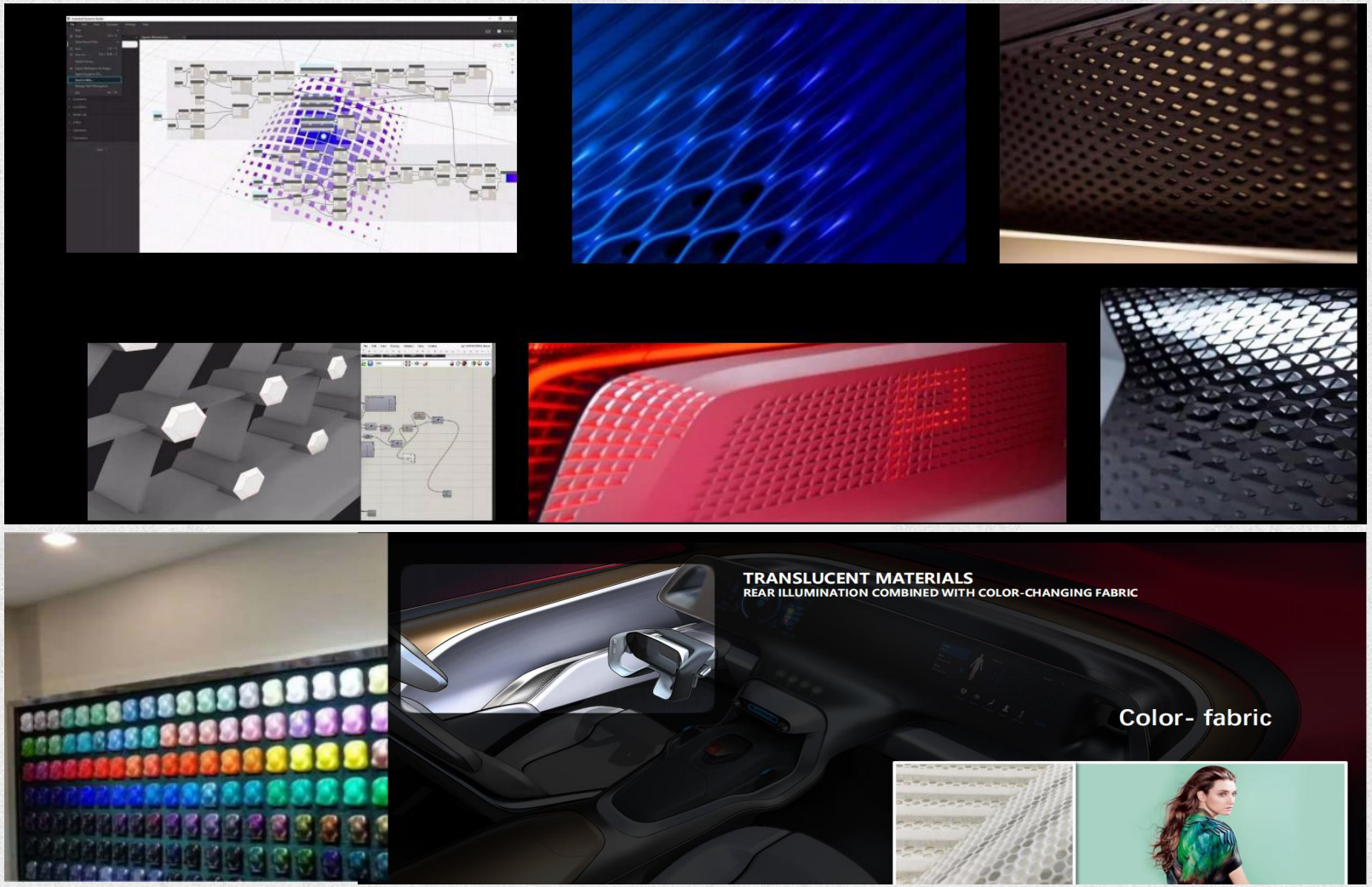
业务介绍

Business Introduction

Styling design
造型设计

- design sketch 创意设计
- CAS 数字模型
- Class A A级曲面
- Clay modeling油泥模型

◆ 细节设计/Details Design (CMF)



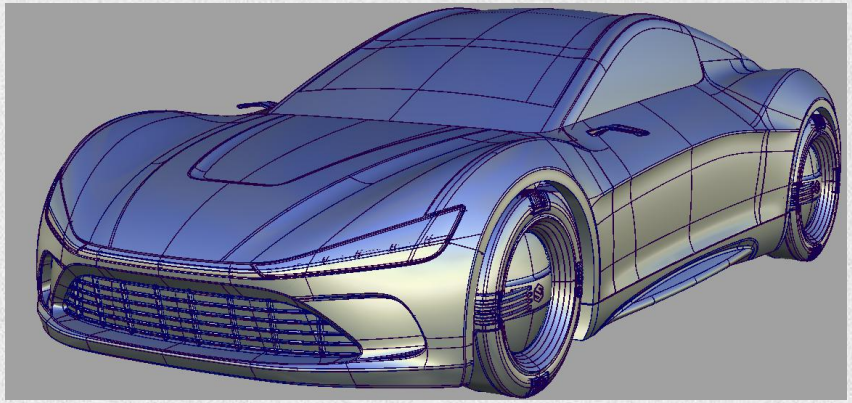
业务介绍

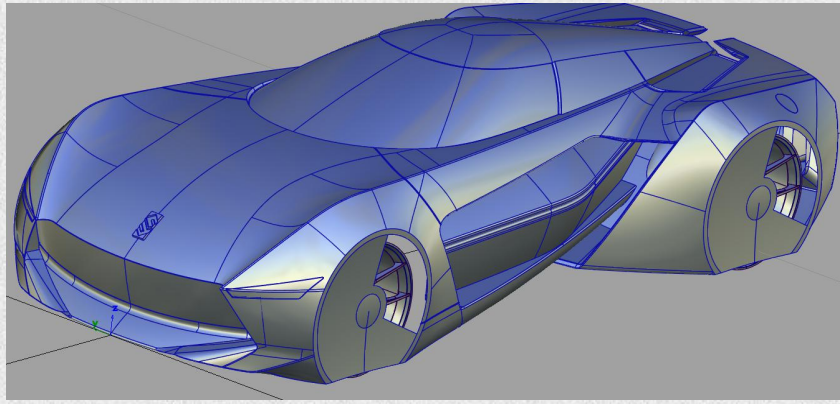
Business Introduction

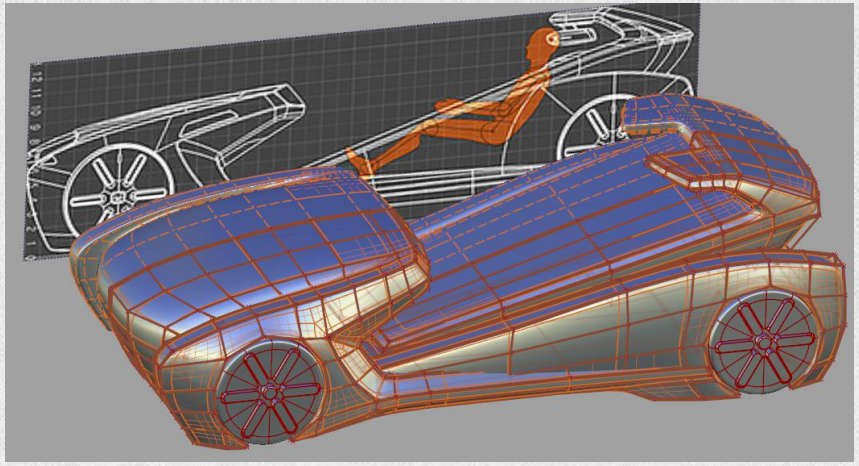
Styling design
造型设计

- design sketch 创意设计
- CAS 数字模型
- Class A A级曲面
- Clay modeling油泥模型

◆ **CAS design**







业务介绍

Business Introduction

Styling design
造型设计

- design sketch 创意设计
- CAS 数字模型
- Class A A级曲面
- Clay modeling油泥模型

◆ Class A design

中文 Chinese	英文 English	简写 Ab.	符号 Symbol	中文 Chinese	英文 English	简写 Ab.	符号 Symbol
间隙	GAP	G		平行度	PARALLLELISM	P	//
面差*	FLUSH	F		面差一致性	SYMMETRY of FLASH	S	
对齐度	ALIGNMENT	A		间隙一致性	SYMMETRY of GAP		

*面差正负的含义：两零部件A/B的面差为正，则表示A件高于B件（如下图）；A/B为负的时候恰相反。

Value: A/B>0, indicates A is outboard as figured left
A/B<0, indicates A is inboard.

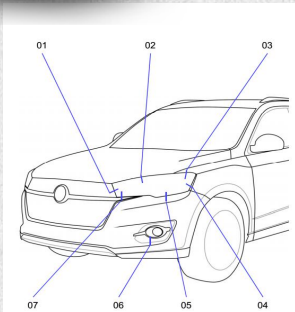
编号说明(Code Description):

5 位编码 Codes

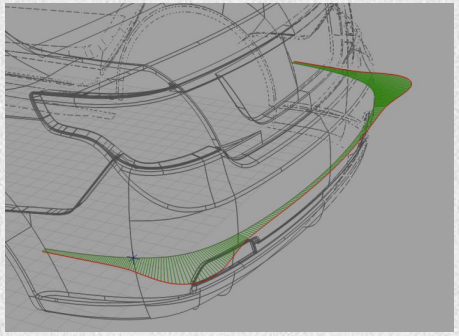
FE 01 L

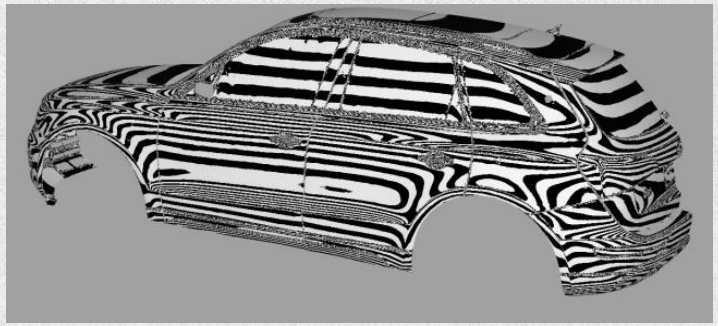
车辆方位Side of Car
序列号 Sequence Identifier
区域代码Function Area Code

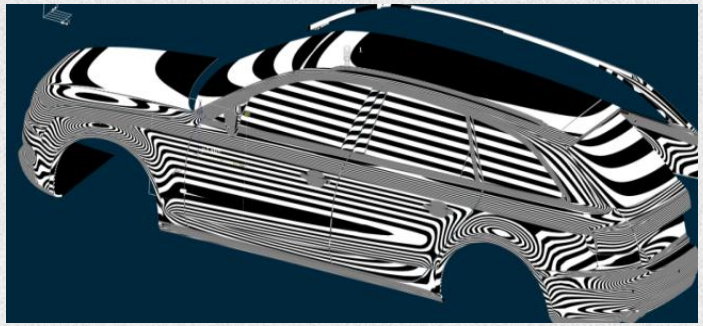
Function Area Code	English	Chinese
FE	Front Exterior	前端外饰
ME	Middle Exterior	中部外饰
RE	Rear Exterior	后端外饰
IP	Instrument Panel	仪表内饰
CS	Console	中控内饰
DC	Door Casing	门板内饰
EI	Else Interior	其它内饰



No.	interface	Nom.		Tol.	//	S
FE01L	Headlamp / Grille Finisher	G	2.5	±1.3	-	1.2
		F	TBD	-	-	-
FE02L	Headlamp / Bonnet	G	7.0	±1.0	-	-
		F	-	-	-	-
FE03L	Headlamp / Fender	G	TBD	-	-	-
		F	-	-	-	-
FE04L	Headlamp / Fender	G	2.0	+1.0/0	-	-
		F	TBD	-	-	-
FE05L	Headlamp / Bumper	G	2.0	±1.3	-	-
		F	-	-	-	-
FE06L	Fog Lamp / Bumper	G	1.0	±0.5		
		F	-	-	-	-
FE07L	Headlamp / Bumper Trims	G	2.0	±1.3		
		F	-			







业务介绍

Business Introduction

Styling design
造型设计

- design sketch 创意设计
- CAS 数字模型
- Class A A级曲面
- Clay modeling油泥模型

◆ **Clay modeling**

Engineer design

工程设计

业务介绍

Company Profile

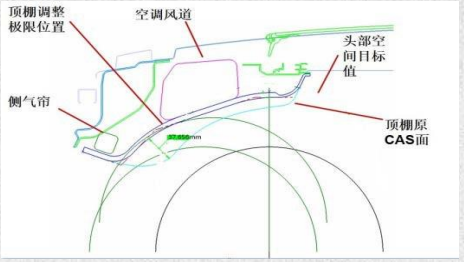
Engineering design

工程设计

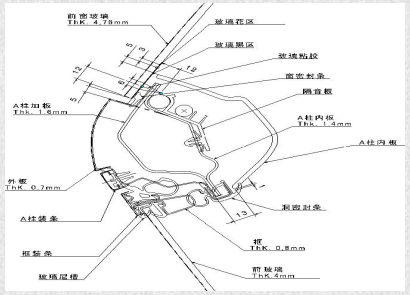
- Feasibility analysis 可行性分析
- Body design 车身设计
- electrical design 电路设计
- SE 同步工程
- Package 总布置
- CAE 分析
- drawing 工程图
- DMU checking 空间分析

◆ 可行性分析：

类别	造型可行性分析内容
总布置分析	人机、硬点参数、法律法规，碰撞安全等
车身内外饰分析	主断面、结构，DMU、CAE等
零部件分析	出模、结构，配合、DMU等

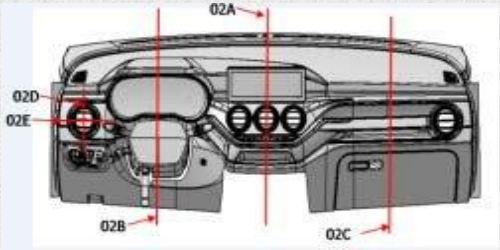


空间布置断面 Spatial layout section

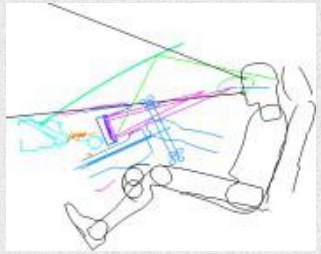


工程设计断面 Engineering Design Section

一、总布置分析 General layout analysis	
1、整车尺寸校核 Vehicle Dimensional Check	
1.1 整车外廓尺寸校核 Check of Overall Dimension of Vehicle	长 Length
	宽 width
	高 Height
	……
	轴距 Wheelbase
	最小离地间隙 Minimum ground clearance
	车轮包络 Wheel envelope
1.2 整车空间分析 Vehicle Space Analysis	前排头部空间 Front row head space
	后排头部空间 Rear row head space
	发动机舱空间 Engine cabin space
	行李箱空间 Trunk space
2、整车人机分析 Vehicle Man-machine analysis	
2.1人体坐姿 Body sitting posture	人体坐姿 Body sitting posture
2.2 前后舱盖开启 Front and rear hatch openings	开启角及高度 Opening angle and height
	备胎取用（如需要）Spare tire withdrawal (if necessary)
3、整车外表面法规分析 Analysis of the Regulations on the Vehicle Outer Surface	
3.1 外凸 External convex	外凸 External convex
3.2 视野校核 Vision Checking	上下视野 Upper and lower Visual field
	……
	雨刮面积 Wiper area
3.3 牌照板校核 License Plate Checking	前后牌照板安装位置、上仰角、可视范围 Installation position, elevation and visual range of front and rear license plates
	……
	牌照灯安装空间、入射角 Installation space and incident angle of license plate lamp
4、整车内表面人机工程及法规分析 Man-Machine Engineering and Regulation Analysis of Vehicle Inner Surface	
4.1 仪表板 Dashboard	仪表板前除霜风口位置布置分析 Analysis of the position of defrosting tuyere in front of dashboard
	……
	仪表板与周边配合件的布置分析 Layout analysis of dashboard and peripheral fittings
4.3 门内饰板 Door trim	手伸及最后极限位置分析 Analysis of Hand Extension and Final Boundary Position
	门内饰扣手手柄布置分析 Analysis of Handle Layout of Door Trim spiker



主断面分布图 External Macro Section Distribution Diagram



视野分析 Visual field analysis

布置、车身、内外饰分析 package, body, interior and exterior trim analysis

业务介绍
Company Profile

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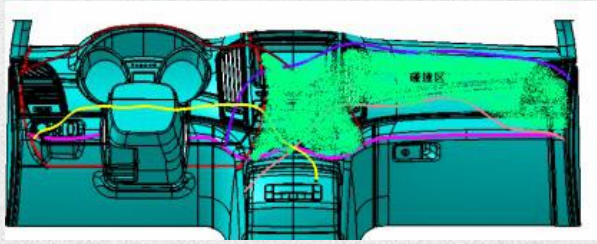
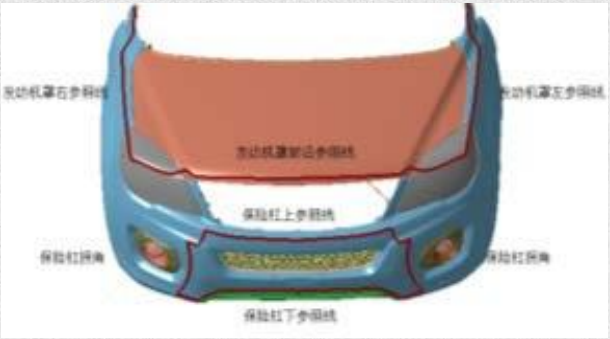
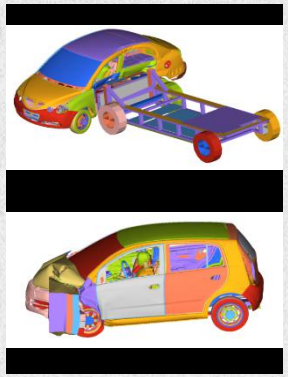
◆ 人机布置及校核：
Ergonomic verification

内部突出物

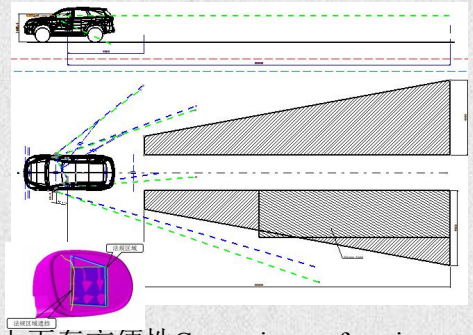


行人保护

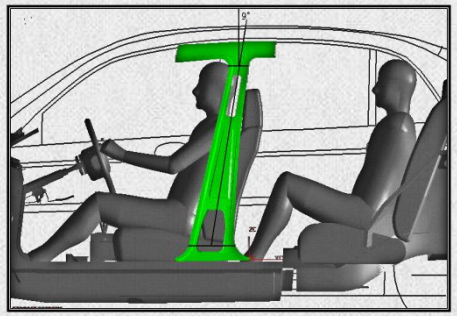




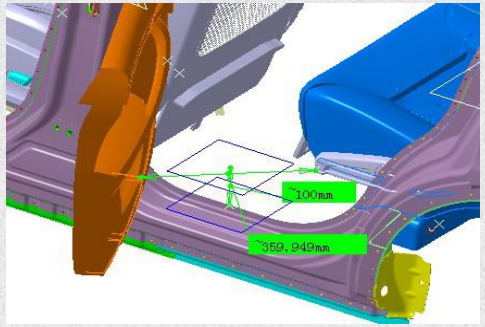
后视镜视野Rearview mirror field of view



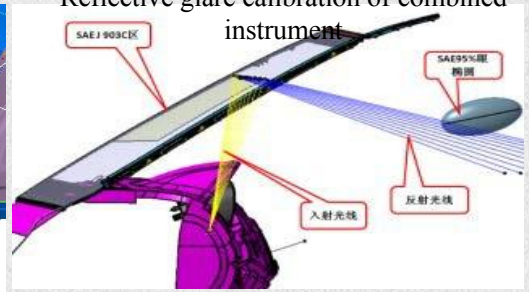
B柱倾角 B pillar inclination angle

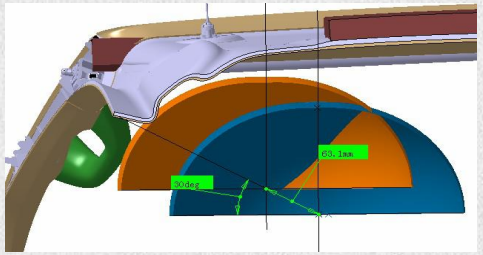


上下车方便性Convenience of getting on and off



组合仪表反光眩目校核
Reflective glare calibration of combined instrument





头部空间 Head space

手伸及界面
Hand-reach

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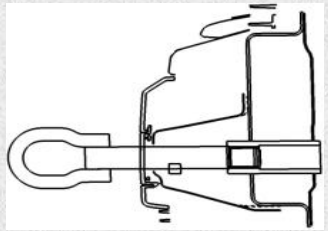
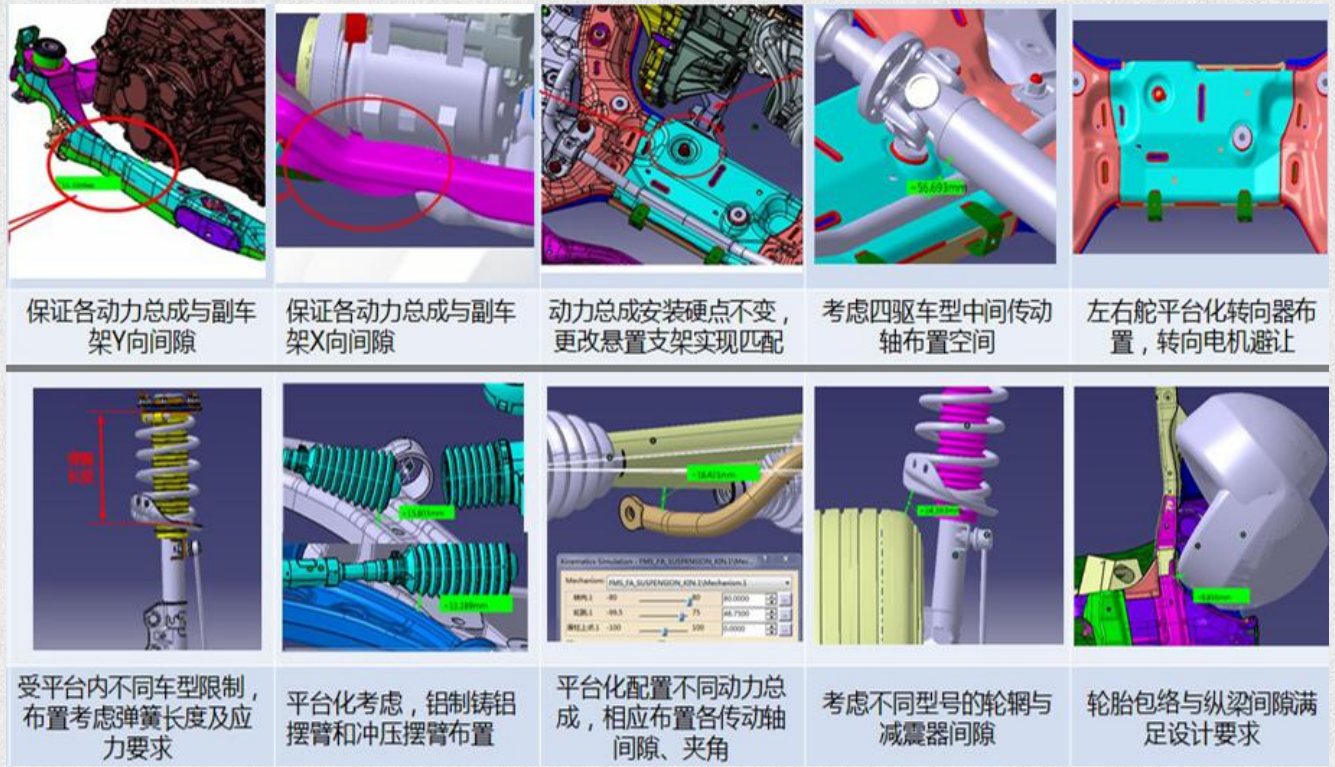
◆ 下车体布置及校核：
Chassis package and check

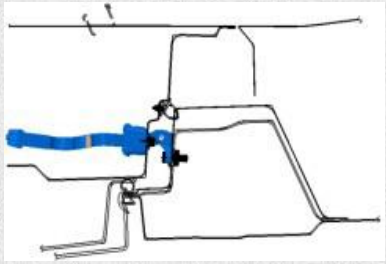
拖车钩布置 Trailer hook layout



摄像头布置 Camera Layout



前后雨刮布置 Rear wiper layout



业务介绍
Company Profile

Engineering design
工程设计

- Verification(Feasibility analysis)
- electrical design
- Package
- Vehicle safety
- Body design
- drawing
- CAE
- DMU

◆ 车身设计：
Body design

造型工程可行性分析

Styling Engineering feasibility analysis

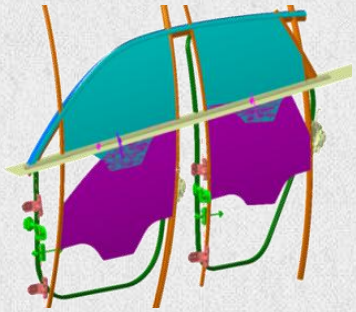
附件布置

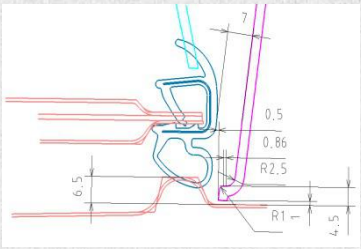
Accessories layout

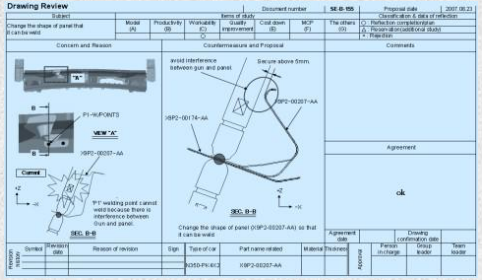
标准断面

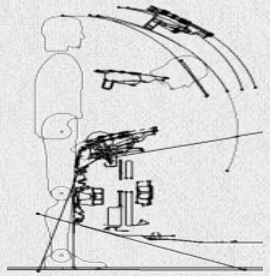
Standard section

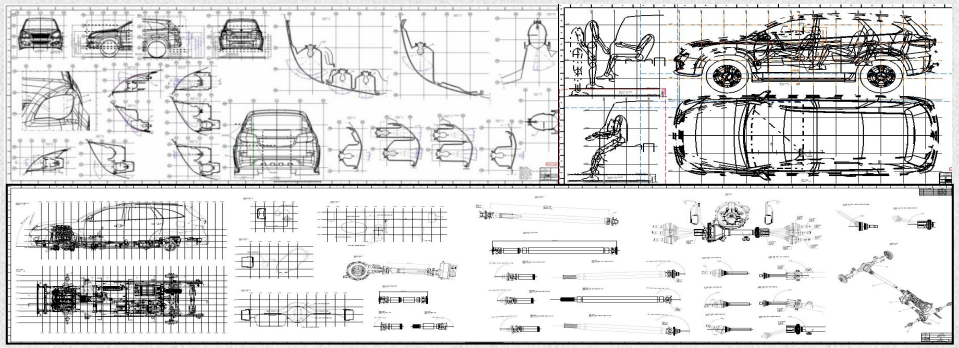
工程断面 Engineering Section 布置数据





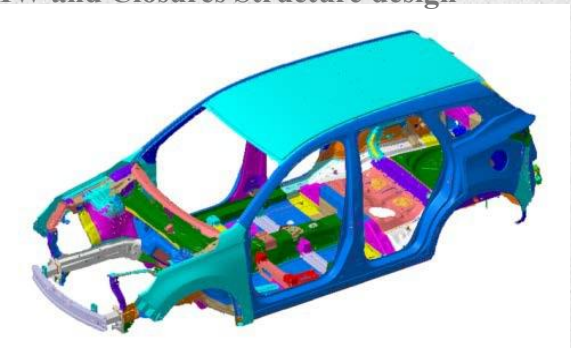


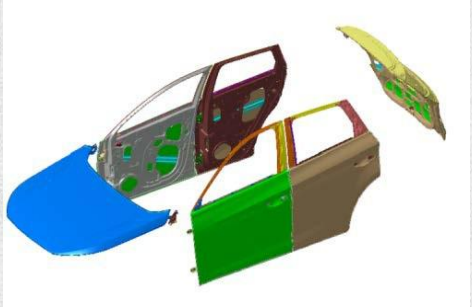


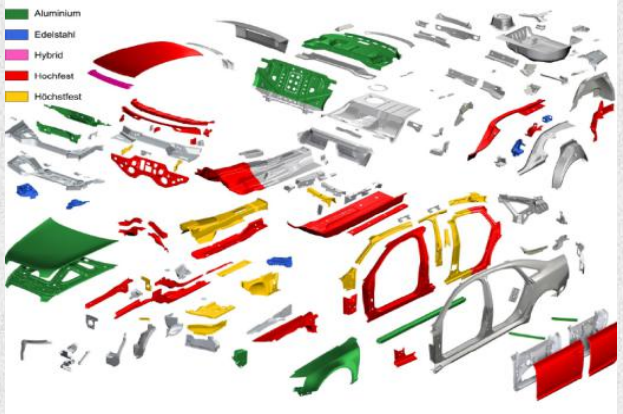


白车身、开闭件结构设计

BIW and Closures Structure design

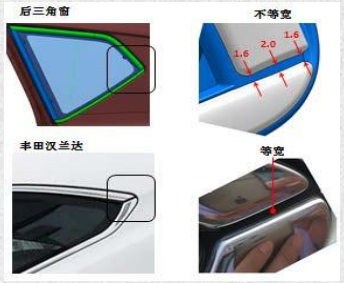




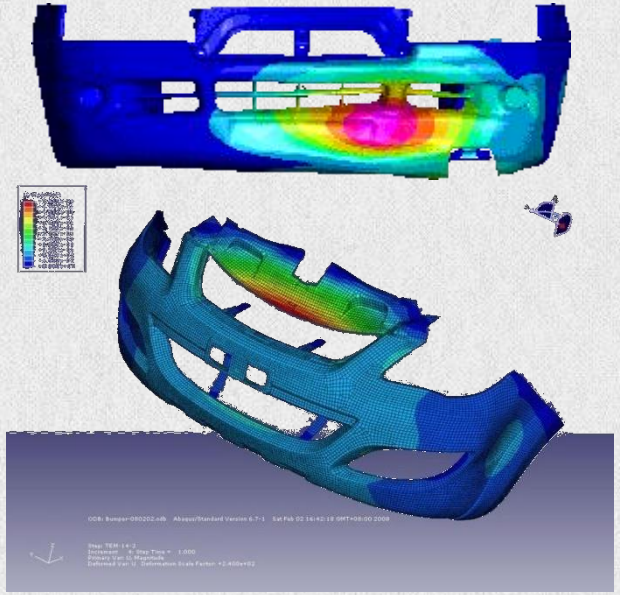


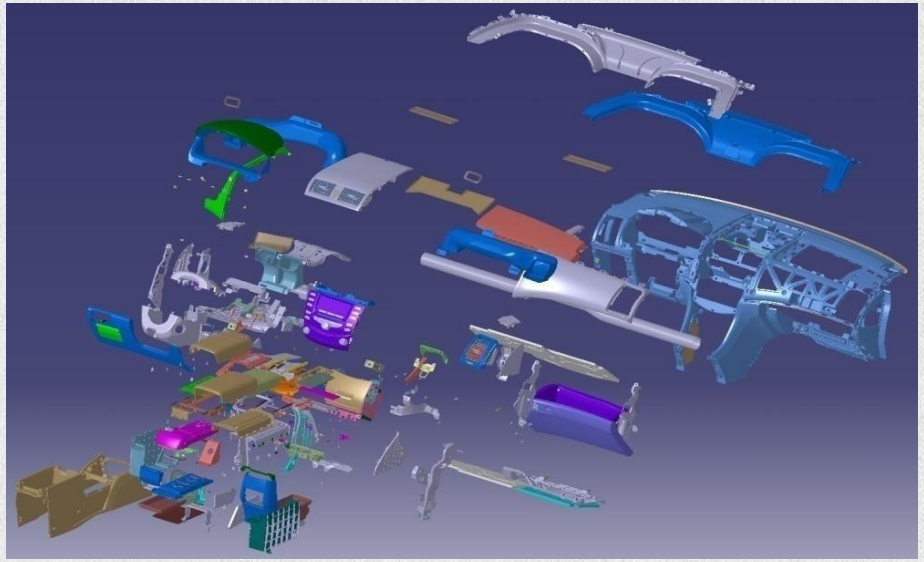
业务介绍
Company Profile

◆ 饰件设计
Interior and exterior trim design



Engineering design
工程设计





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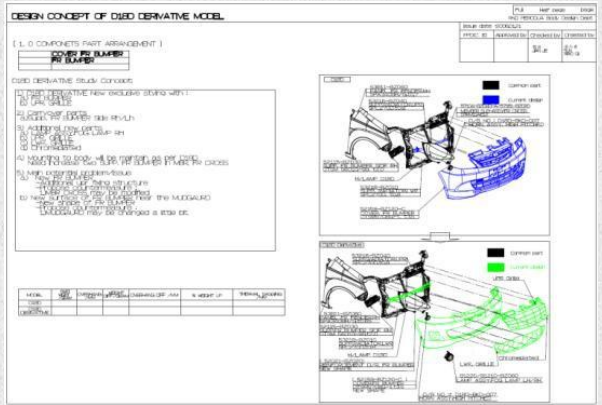
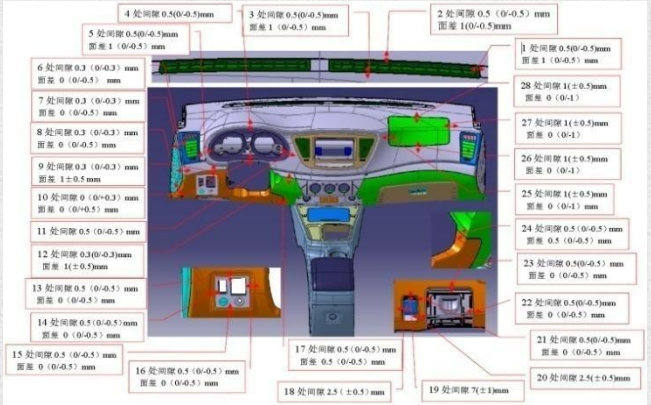
  分析
- DMU checking
  空间校核





业务介绍

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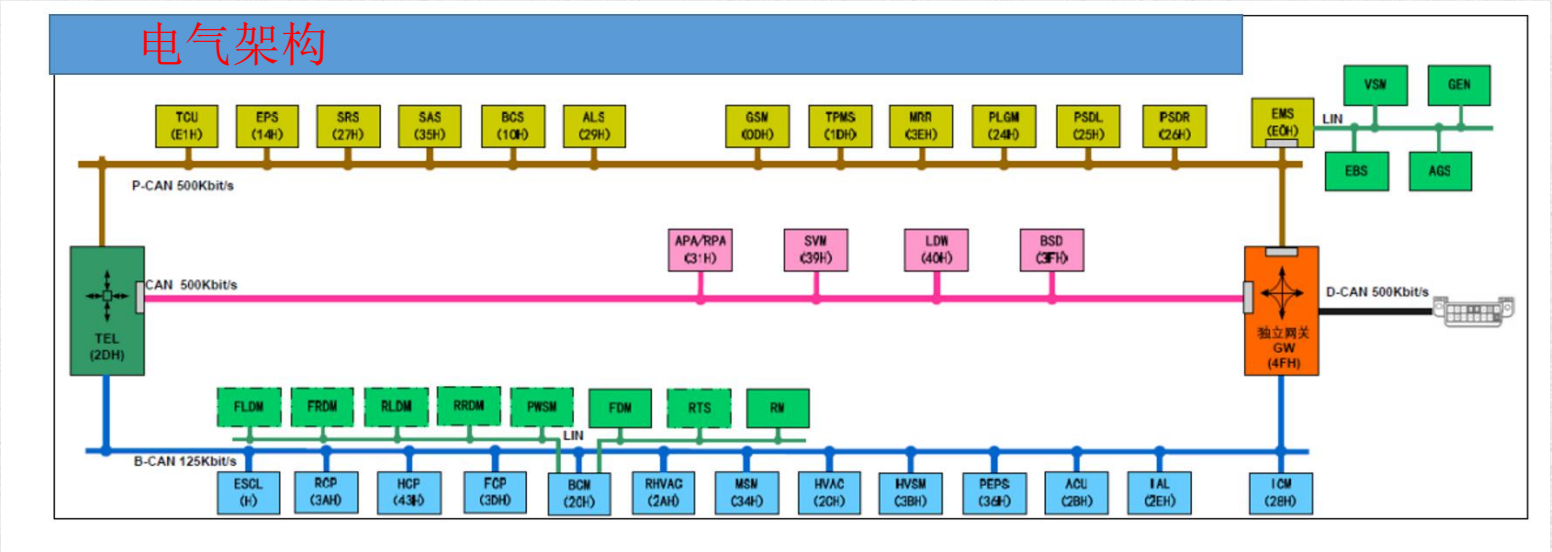
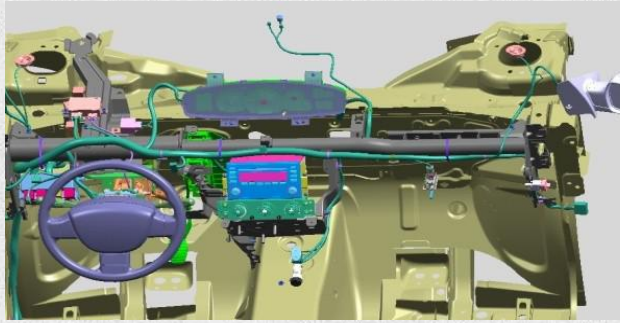
◆电子电器

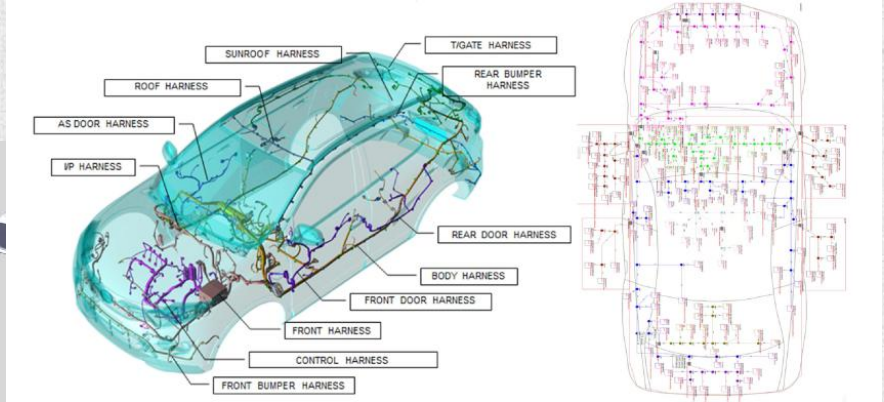
Design of Electronic and Electrical Appliances



整车线束设计

Design of Vehicle Wire Harness





■ 分为：前线束，发动机线束，IP线束，Body线束，PDC线束，Roof线束，门线束，尾门线束

业务介绍

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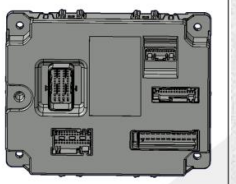
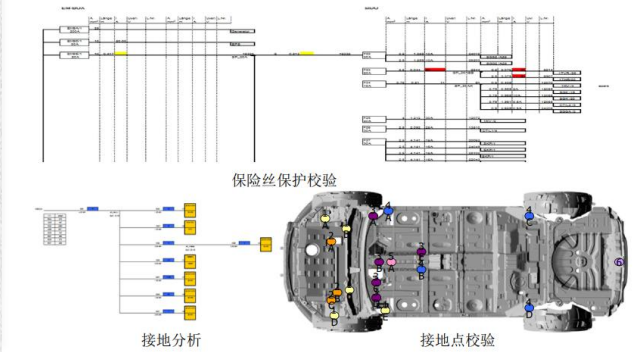
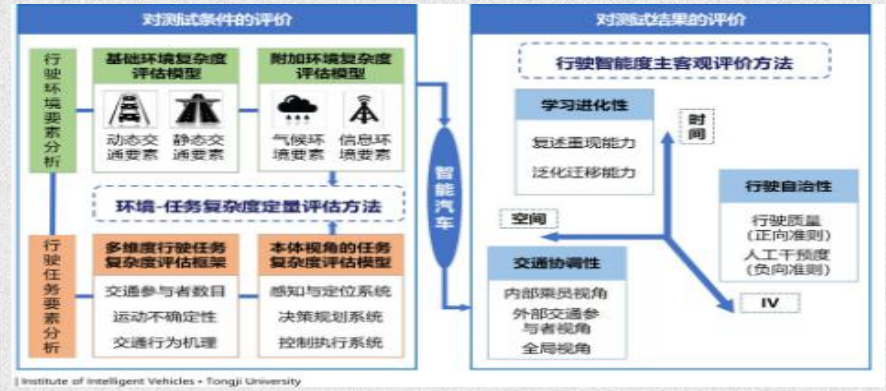
◆电子电器

Design of Electronic and Electrical Appliances

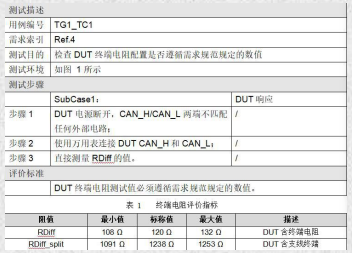
系统分类	零部件名称	开发方案描述	简图
车身控制系统	控制器	控制器采用BCM控制功能+一键启动+无钥匙进入+胎压监测+IMMO防盗集成方案。硬件借用19款T70车型。 1. 遥控解锁控制，具有寻车、后备箱开启、无钥匙等功能； 2. 支持四门玻璃一键升降、天窗开启功能； 3. 具有伴你回家，自动大灯，故障诊断功能； 4. 满足前雨刷间歇、慢速、快速、自动、前喷水功能。满足后雨刷喷水，雨刷等功能。 5. 接收胎压胎压传感器信号，并传送显示屏，满足CAN通讯 6. 满足各档位OFF、ACC、IG1、IG2电源控制需求； 7. 满足CAN节点通讯	
	左前门门把手天线	1. 暂定借用19款T70天线 2. 配合门把手造型匹配 3. 满足无钥匙进入功能	
	一键启动开关	1. 借用19款T70开关 2. 满足控制器信号需求格式 3. 实现OFF、ACC、IG1、IG2循环切换 4. 根据造型布置确定位置	





测试天数	1天
天气状况	晴，19℃
测试路段	高速路段
乘员状况	1人
里程状况	110.6km

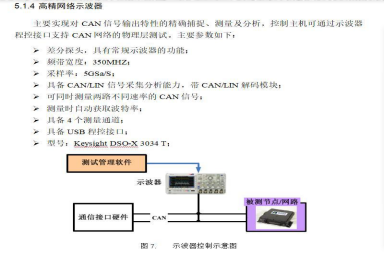
驾驶模式：舒适	实际消耗续航里程：190.75km
动能回收强度：标准	测试里程：125.5km
空调：24℃、风量2档	平均速度：94.1km/h
起始表显续航里程：388km	消耗电量：30.22Wh
结束表显剩余里程：191km	实测电耗：24kWh/100km



测试描述		
用例编号	TG1_TC1	
需求索引	Ref.4	
测试目的	检查 DUT 终端电阻配置是否遵循需求规范规定的数值	
测试环境	如图 1 所示	
测试步骤		
	SubCase1：	DUT 响应
步骤 1	DUT 电源断开，CAN_H/CAN_L 两端不匹配任何外部电路；	/
步骤 2	使用万用表连接 DUT CAN_H 和 CAN_L；	/
步骤 3	直接测量 RDiff 的值。	/
评价标准		
	DUT 终端电阻测试值必须遵循需求规范规定的数值。	

表 1　终端电阻评价指标

阻抗	最小值	标称值	最大值	描述
RDiff	108 Ω	120 Ω	132 Ω	DUT 含终端电阻
RDiff_split	1091 Ω	1238 Ω	1253 Ω	DUT 含支线终端



业务介绍

Company Profile

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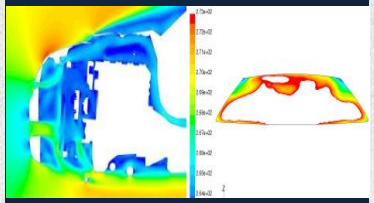
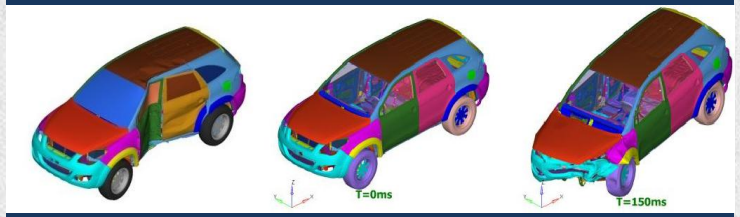
◆ CAE 分析

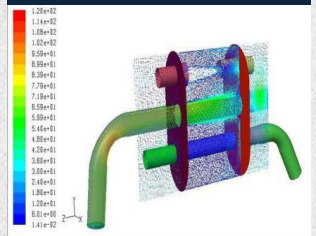
热力学



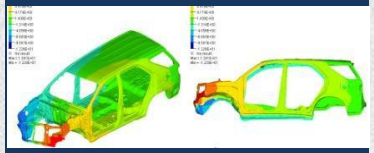
碰撞安全性

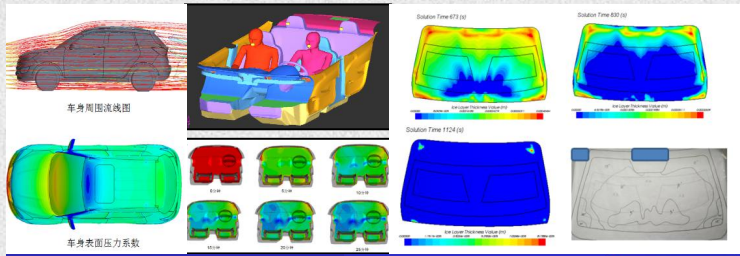


NVH

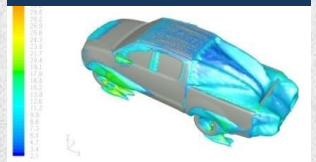


弯曲及扭转刚度

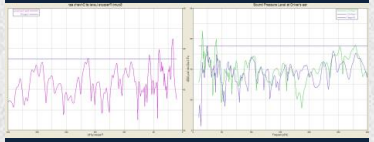


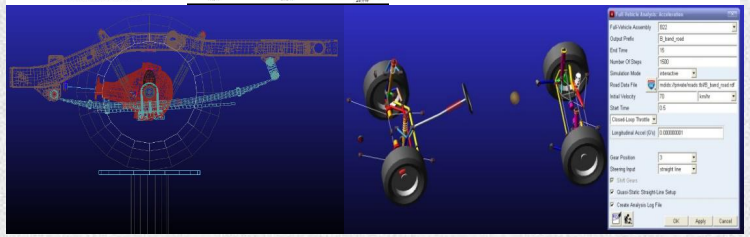


计算流体力学



频率响应





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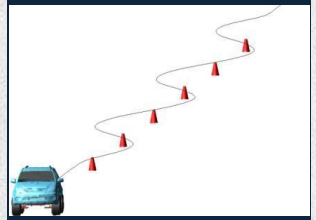
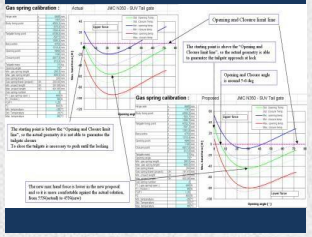
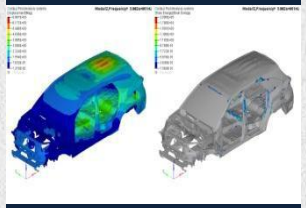


动力学

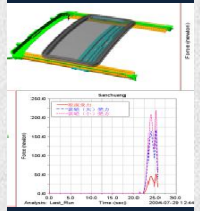


模态分析

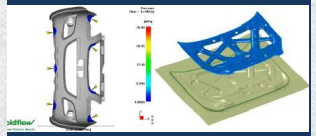


强度

运动学



工艺模拟



业务介绍

Company Profile

Engineering design
工程设计

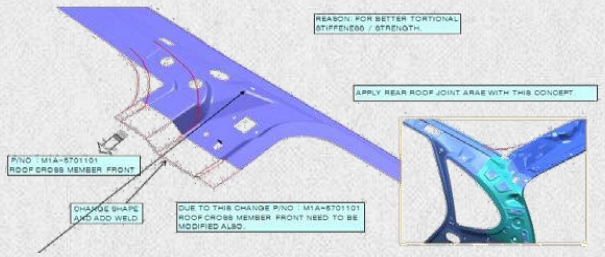
- Feasibility analysis
  可行性分析
- Body design
  车身设计
- electrical design
  电路设计
- SE
  同步工程
- Package
  总布置
- Interior and exterior
  饰件设计
- CAE
  分析
- DMU checking
  空间校核

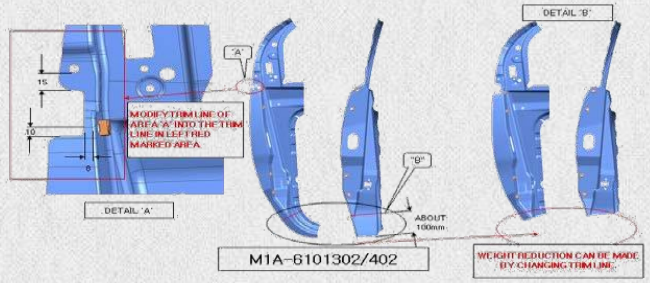
◆ SE

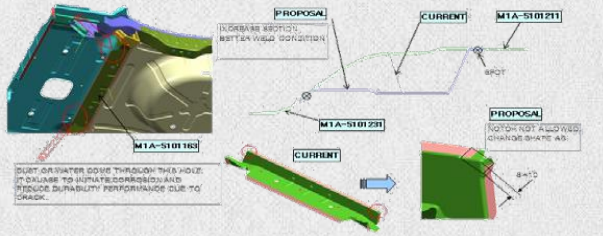
冲压工艺解决方案
Stamping Process Solution

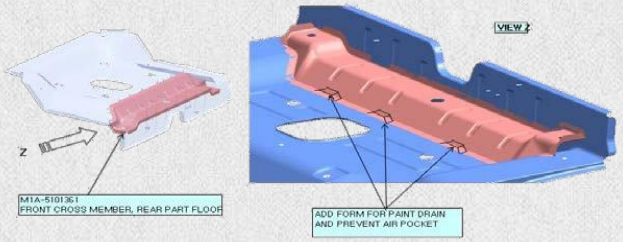
焊接工艺解决方案
Welding Process Solution

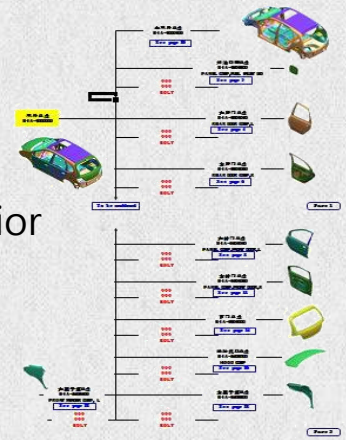
GD&T尺寸工程
GD&T Dimension Engineering

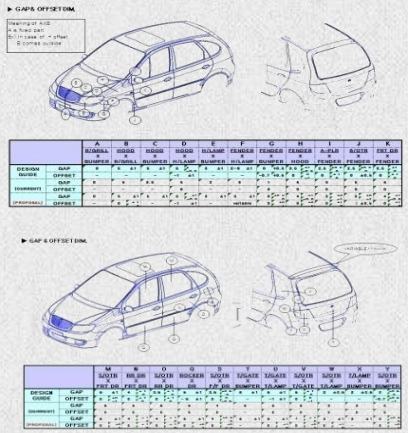


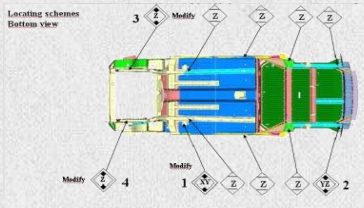


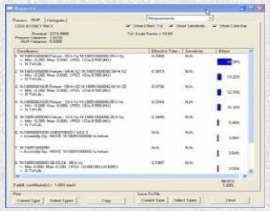


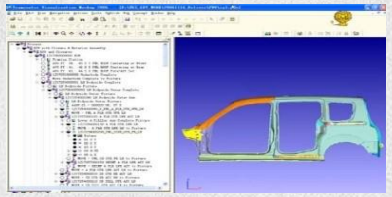


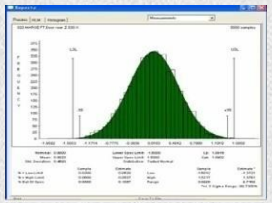












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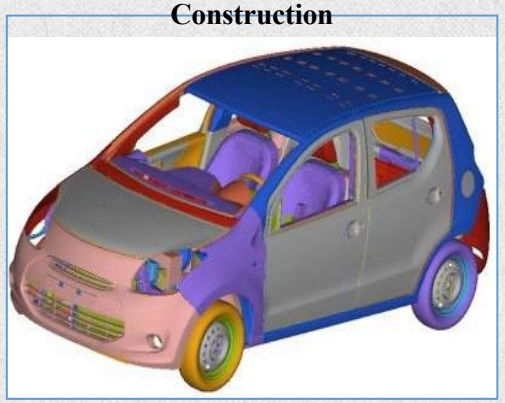
- DMU checking 空间校核

◆ **DMU校核**

DMU Checking

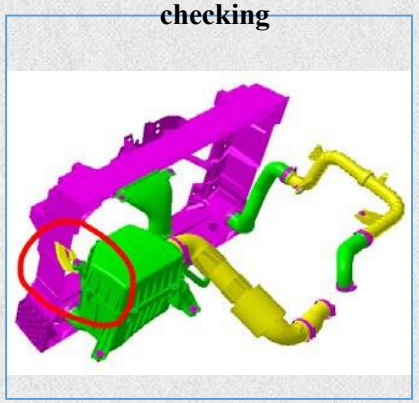
数据管理 DM → 干涉 Interference → 间隙 Clearance → 装配 Assembly → 运动 Motion → 维修 Maintenance

数据管理及搭建
Data Management and Construction

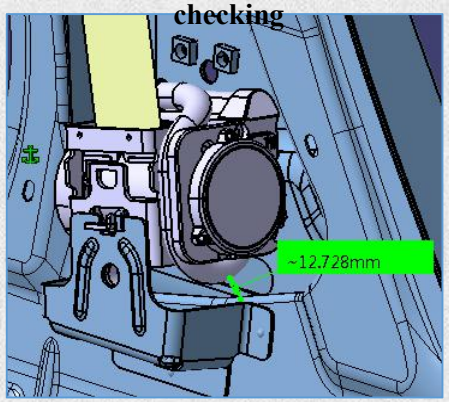


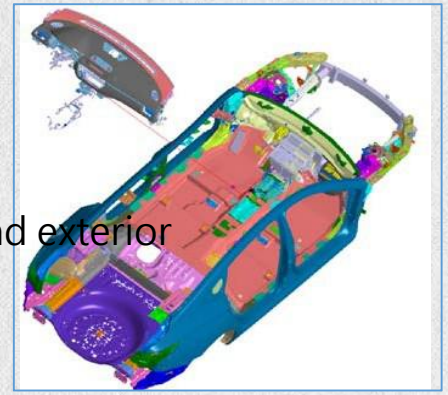
数据状态校核
Data status checking

干涉校核
Interference checking

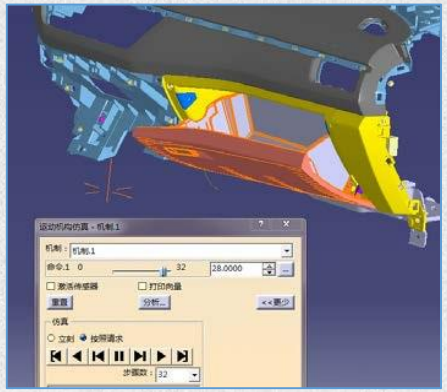


间隙校核
Clearance checking



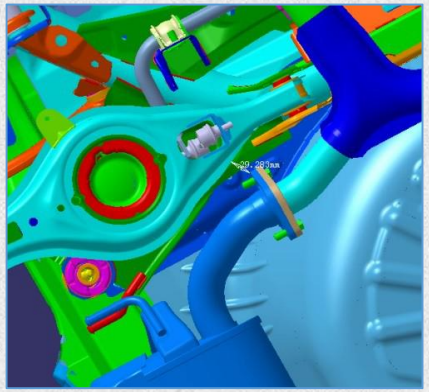


装配校核
Assembly checking



运动校核
Motion checking

维修方便性校核
Maintenance Convenience Checking



平台间隙校核
Platform clearance checking

1 Company profile

2 Business Introduction

3 Successful case

4 Cooperative partner

成功案例
Successful Case

Volkwagen

Job content：

1、Class A

成功案例
Successful Case

GS8

Job content：

1、Exterior Class A

2、 Ip Class A

3、Ip structure 3D

成功案例
Successful Case

Maxus D90

Job content：

1、 Creative interior design

2、CAS/Class A

3、Make sample(model)

4、Body, interior and exterior

成功案例
Successful Case

CS15

Job content：

1、CAS/Class A

2、Body, interior and exterio

3、CAE

4、Electrical design

成功案例
Successful Case

New Energy

Job content：

1、Strategy

2、CAS、ClassA

3、Make sample(model)

4、 Steering calculation

5、Body, interior and exterior

6、 Electrical design

成功案例
Successful Case

Geely Geometry A

Job content：

1、CAS、ClassA

2、Make sample(model)

3、Body, interior and exterior

成功案例
Successful Case

Geely icon

Job content：

1、CAS、ClassA

2、Make sample(model)

3、Body, interior and exterior

成功案例
Successful Case

Changan Ouliwei

Job content：

1、CAS、ClassA

2、Make sample(model)

3、Body, interior and exterior

成功案例
Successful Case

Zotye T700

Job content：

1、CAS、ClassA

2、Body, interior and exterior

3、CAE

成功案例
Successful Case

Lifan Bojun

Job content：

1、CAS

2、Class A

3、Make sample(model)

成功案例
Successful Case

4.5T New Energy

Job content：

1、CAS、ClassA

2、 Ergonomic analysis

3、 Stamping simulation analysis

4、 Body, interior and exterior

5、 Electrical schematic diagram

6、 Make sample(model)

成功案例
Successful Case

Yogomo New Energy car

Job content：

1、 Preliminary design strategy

2、CMF、CAS、ClassA、 Clay model

3、 Ergonomic analysis

4、 Steering calculation

5、 Body, interior and exterior

6、 Electrical schematic diagram

成功案例
Successful Case

- CAS
- ClassA

成功案例
Successful Case

clay model

柳汽景逸

御捷新能源

东风S60

领途新能源

海马汽车

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合作伙伴
Cooperative Partner

DESIGN

drives the future

【Suzhou CHINA】

Name: yiwen wu
M.B: (086)180 8671 5798
Email: wuyiwen@szupauto.com
http://www.up-auto.com

Address: no.188 xincheng road, dushu lake science and education innovation district, suzhou industrial park .CHINA

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