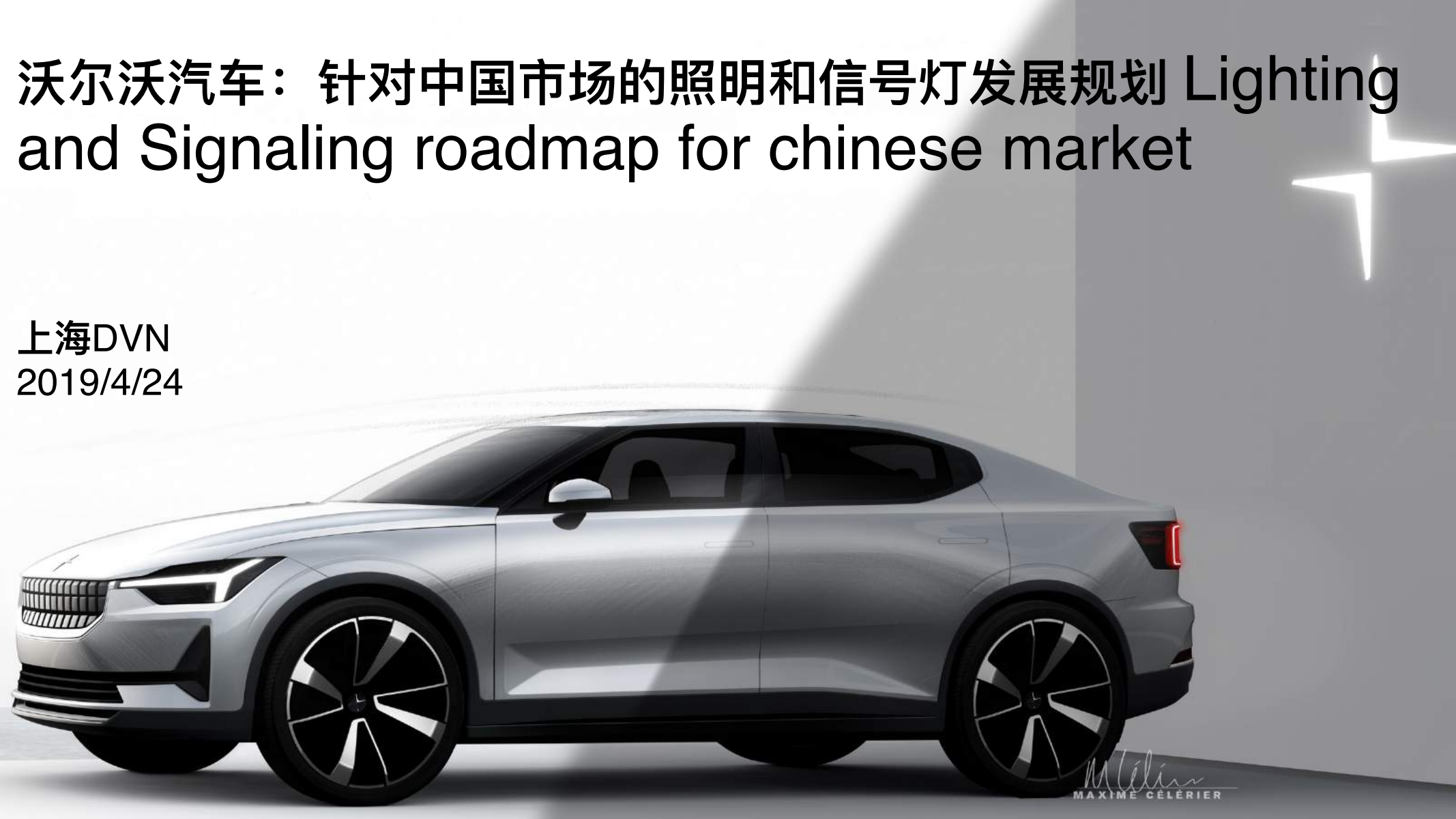
沃尔沃汽车：针对中国市场的照明和信号灯发展规划 Lighting and Signaling roadmap for chinese market

上海DVN
2019/4/24



2020 年沃尔沃汽车远景目标
Volvo Vision 2020

沃尔沃汽车承诺实现"零伤亡"的远景目标--无致命事故或严重伤害事故

Nobody should be killed or seriously injured in a new Volvo car

我们的传承
Our Heritage

“汽车是由人驾驶的- 我们在沃尔沃所做的一切背后的指导原则，因此，必须保持安全。”

“Cars are driven by people.
The guiding principle behind
everything we make at Volvo,
therefore, is –and must
remain – safety”

创始人阿瑟·格布尔森和古斯塔夫·拉尔森
Assar Gabrielsson & Gustaf Larson,
the founders of Volvo

未来远景Vision of the future

- 车辆将成为 Cars will be
  - 自动化 Autonomous
  - 电器化 Electric
  - 互联 Connected

电动汽车Electric vehicle

混合动力
Hybrid

100% 电驱动
100% electric

自动驾驶Autonomous driving

车辆互联Connected Car

和照明系统的关联
What is the link with lighting ?

- Connectivity ➔ More customization, More software
- 互联➔更多定制，更多软件

- Electrical car ➔ More autonomy, Less electrical consumption
- 全电动➔更智能，更低耗电量

- Autonomous car ➔ To be defined
- 自动驾驶

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沃尔沃汽车照明系统技术
Volvo lighting technology

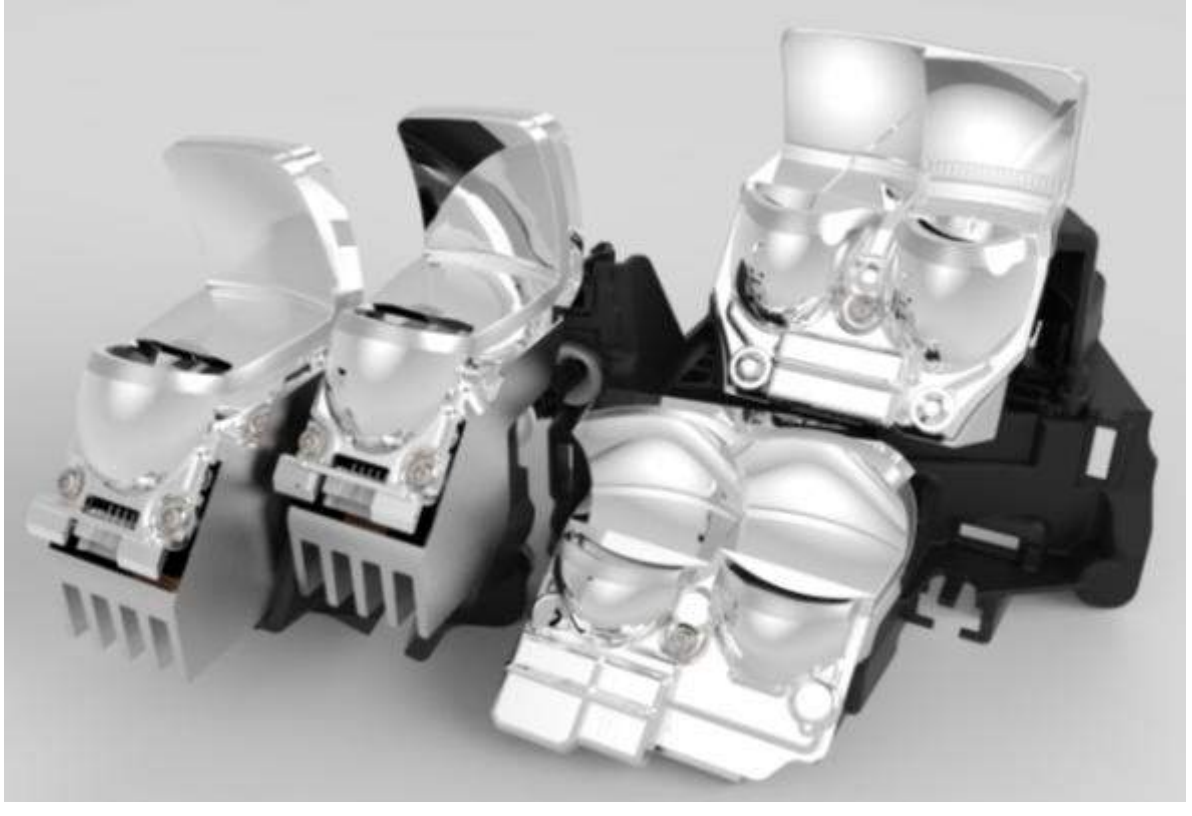
沃尔沃汽车照明系统技术
Volvo lighting technology

- 雷神之锤设计理念无论白天还是黑夜，辨识度绝对是同级领先
- **Thor´s Hammer signature** by day and night
- 全车系标配LED 大灯
- Only **Full leds** headlamp on all car levels

沃尔沃汽车照明系统技术
Volvo lighting technology

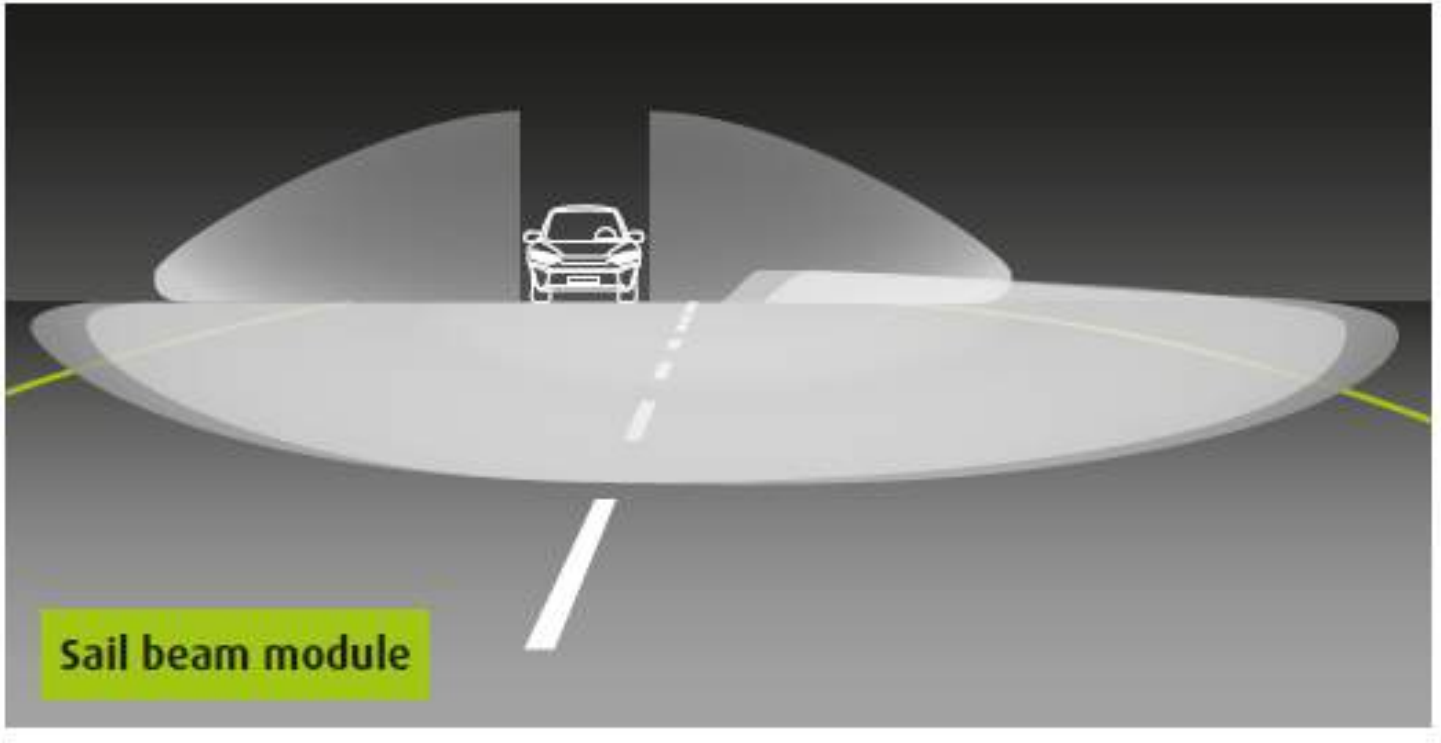
- 集成了日间行车灯，位置灯，转向灯功能
- Combined Day time running Lamp, Position Lamp and Turn Indicator
- 远近光采用反射碗式设计
- Reflector concept for Low Beam and High Beam

沃尔沃汽车照明系统技术
Volvo lighting technology



- 近光 Low beam
- 远光 High beam
- 随动转向功能Swiveling function
- 自适应前照灯Adaptive driving beam

沃尔沃汽车照明系统技术
Volvo lighting technology



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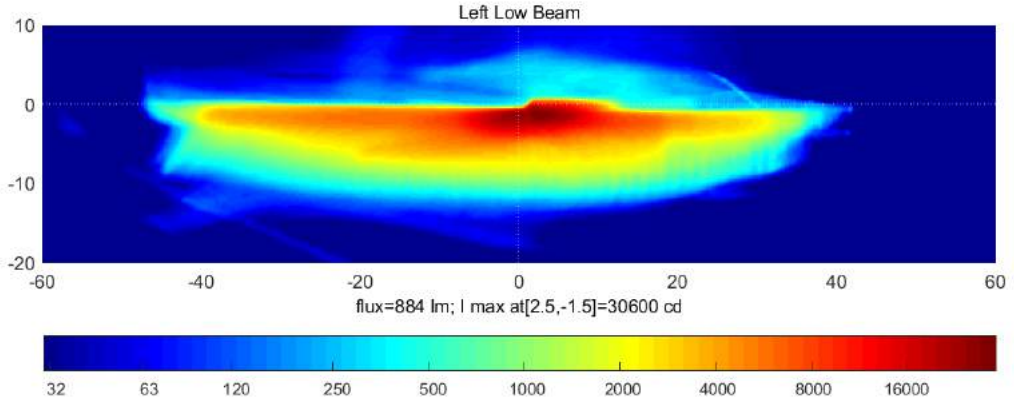
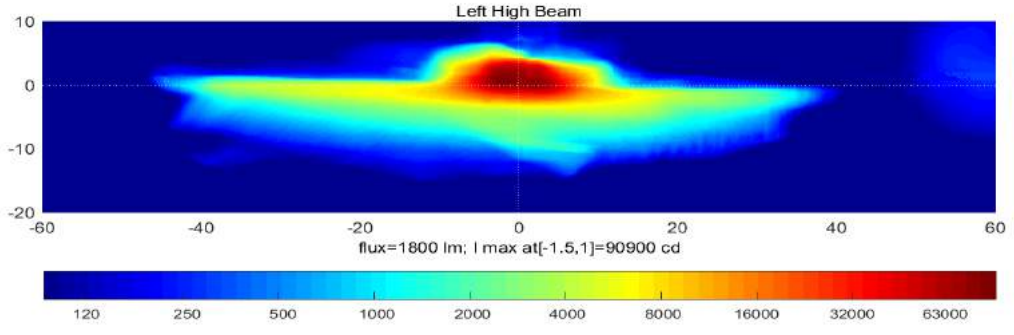
Volvo lighting technology





- 近光Low beam
  - 884 lm
  - +/- 45 度视角（3lux 线）
    +/-45° Field of view (3 lux line)

- 远光High beam
  - 1900 lm
  - Emax 165 lux
  - +/- 15 度视角（3lux 线）
    +/-15° Field of view (3 lux line)

POLESTAR 2 照明系统技术
Polestar 2 lighting technology

- 沃尔沃首款全电动汽车
- First fully electrical car engineered by Volvo

- 低能耗全LED 大灯和尾灯
- Full leds headlamp and rearlamp for power saving

POLESTAR 2 照明系统技术
Polestar 2 lighting technology

- 雷神之锤设计理念
  Thor´s Hammer signature
- 像素级别可随动转向模组；ADB自适应系统
  Pixel beam module with swiveling and ADB technology
- 84分区远近光像素模组+额外宽度照明模组
  84 pixel module for Low Beam & High Beam + additional foreground module

POLESTAR 2 照明系统技术
Polestar 2 lighting technology

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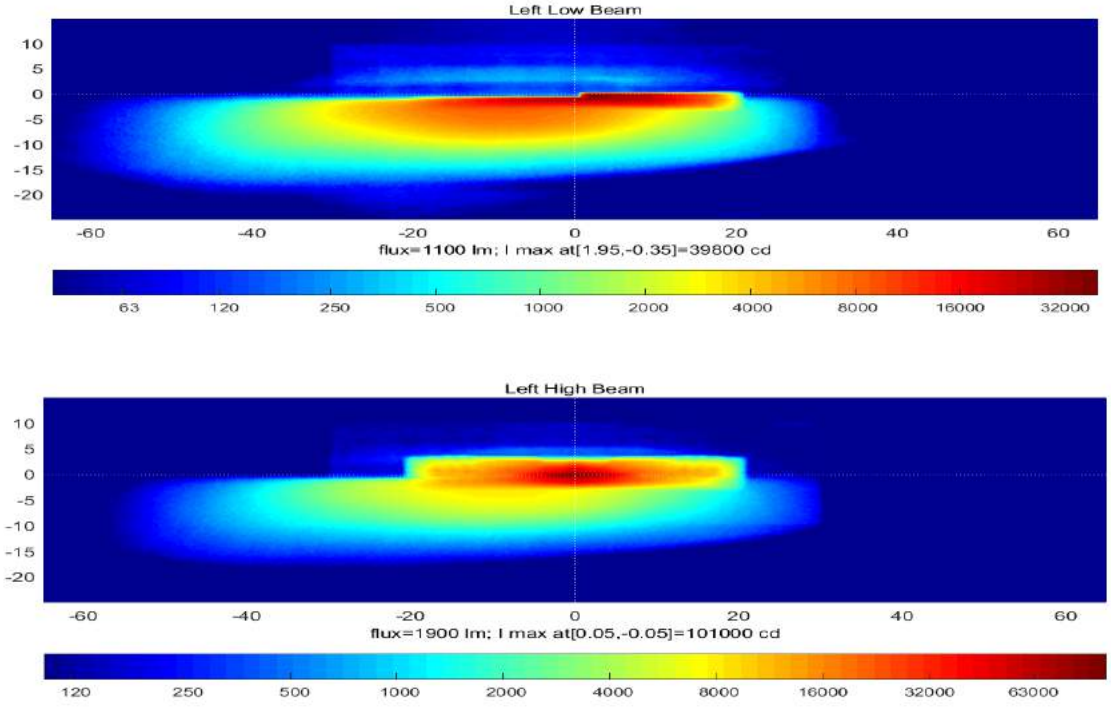
POLESTAR 2 照明系统技术
Polestar 2 lighting technology



- 近光Low Beam
  - 1100 lm
  - +/-40°视角（3lux 线）
    +/-40° Field of view (3 lux line)

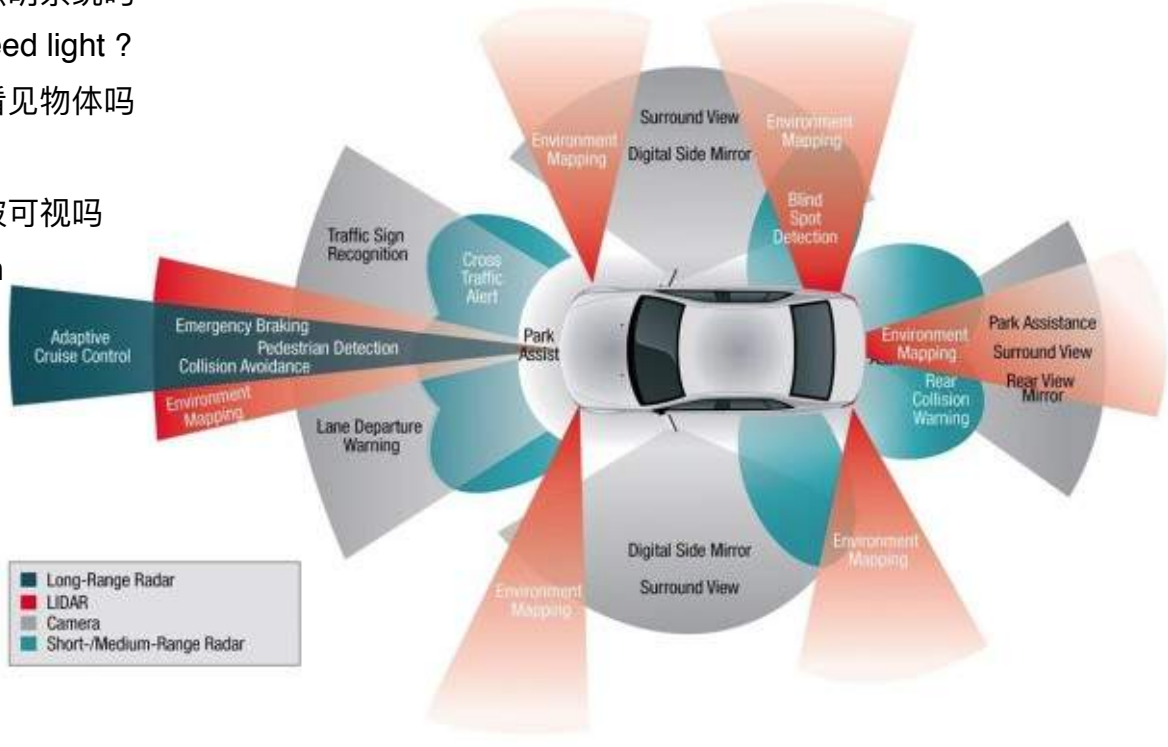
- 远光High Beam
  - 1900 lm
  - Emax 160 lux
  - +/-20°视角（3lux 线）
    +/-20° Field of view (3 lux line)

和照明系统的关联What is the link with lighting ?

- 关联性 ➔更多客户定制，更多软件控制
- Connectivity ➔ More customization, More software
- 电动车➔ 更多自动化控制，更低能耗
- Electrical car ➔ More autonomy, Less electrical consumption
- 自动驾驶➔待定义
- Autonomous car ➔ To be defined

自动驾驶车辆的照明系统 Lighting and AD cars

- 他们需要照明系统吗
- Do they need light ?
- 他们需要看见物体吗
- To see
- 他们需要被可视吗
- To be seen



主动探知To see

- 所有传感器可以检测到所有物体么

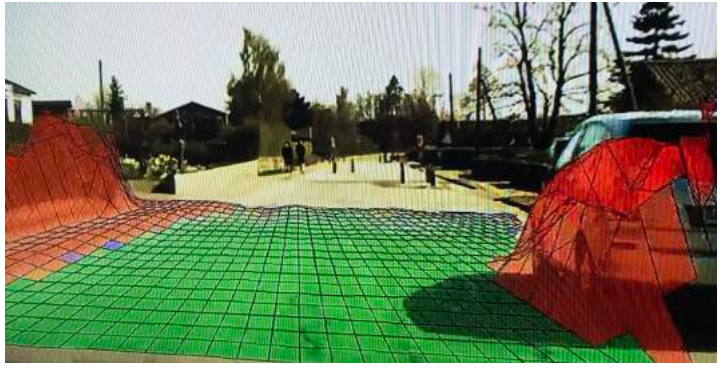
  Are sensors able to detect all the things ?
- 传感器是否能够检测除物体之外的其他物体?

  Are sensors able to detects other things than objects ?
- 摄像头必须可以检测物体

  Camera need to see
- 摄像头的检测范围?

  What will be the field of view of camera ?
  - 现有产品52°；52° today
- 我们需要提高灯具可视范围吗?

  Do we have to increase the lighting field of view ?
  - 现有近光90 °； 90 ° today for Low Beam,
  - 现有远光40 °； 40 ° for High beam



图片来源 *Veoneer Stereo*的摄像头
Picture of Veoneer Stereo camera

被动可见To be seen

被动可见To be seen

明天的会议会展开更多讨论

A lot of discussions & a special session tomorrow

自动驾驶车辆需要被当做特殊车辆检测吗?

Do we need to be seen as a “special car” ?

我们需要和路上其他车辆交流通讯吗?

Do we need to communicate with road users ?

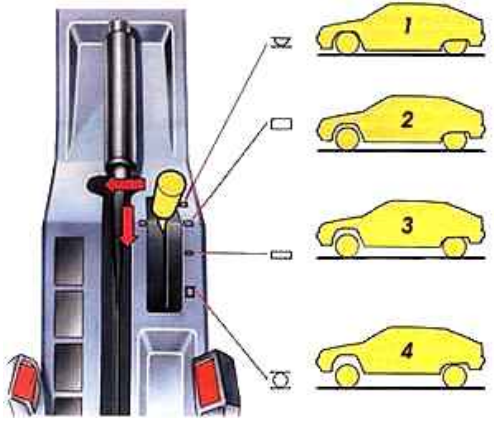
被动可见-沃尔沃汽车的方案
To be seen – volvo proposal

360° 绿宝石色光在无人驾驶的运
360° turquoise light in AD

360° 度起飞
360° take off
INTENTION
TO TAKE OFF
360
360

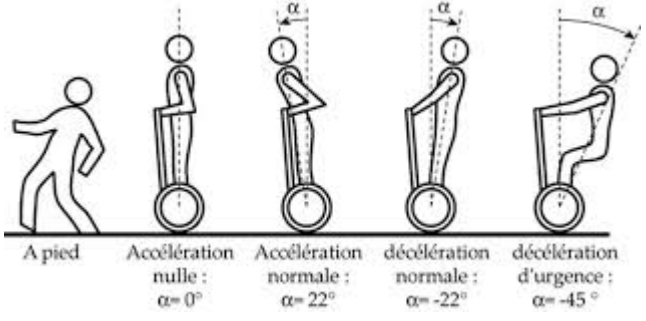
开始移动Start to move

加速acceleration



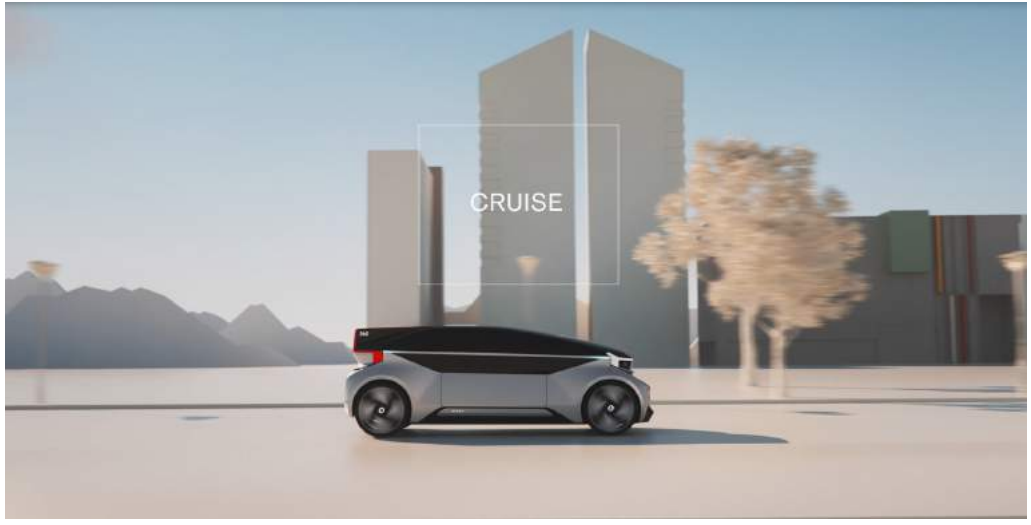
雪铁龙*DS*概念
Citroen DS concept

赛格威的概念
Segway concept

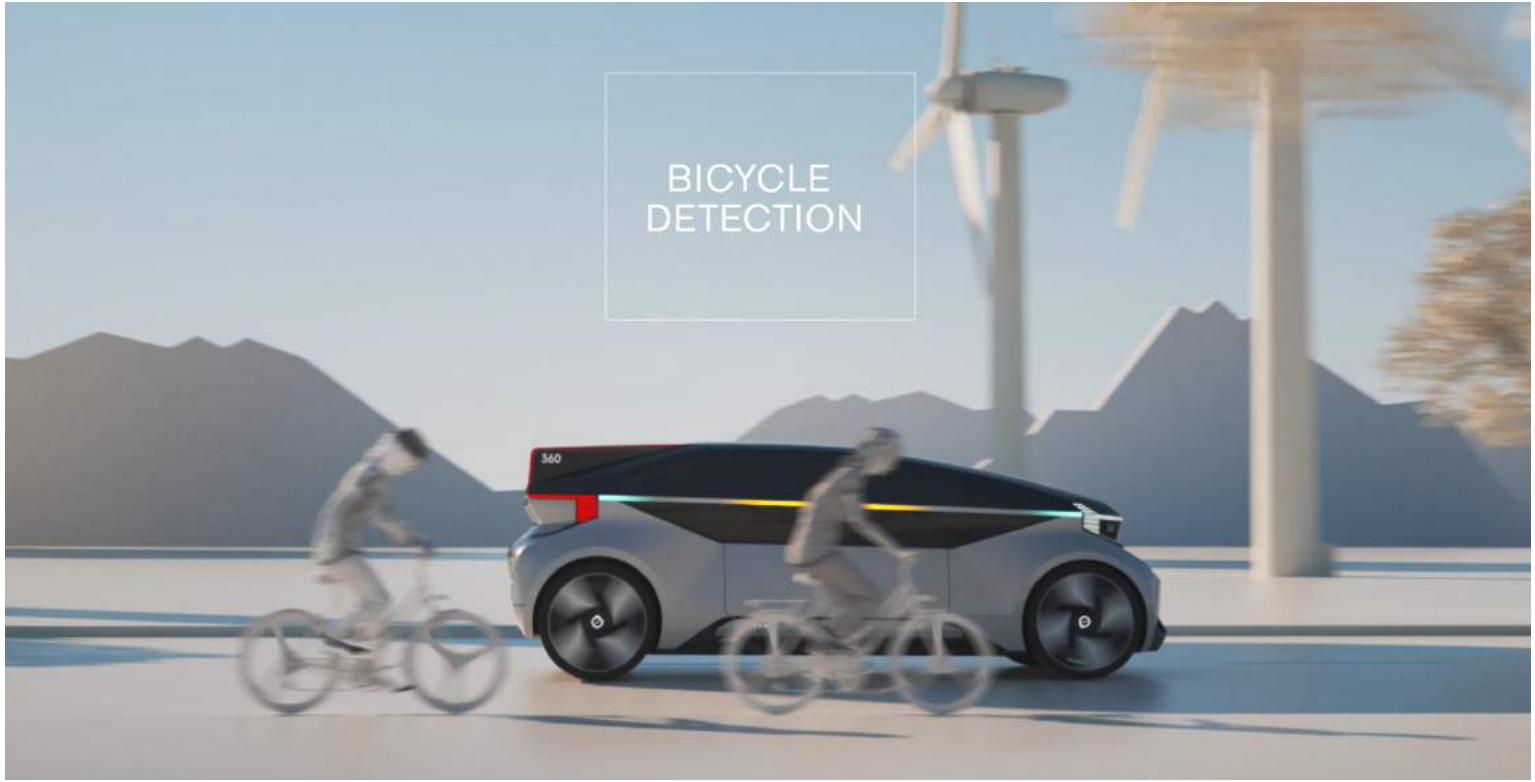


加速acceleration

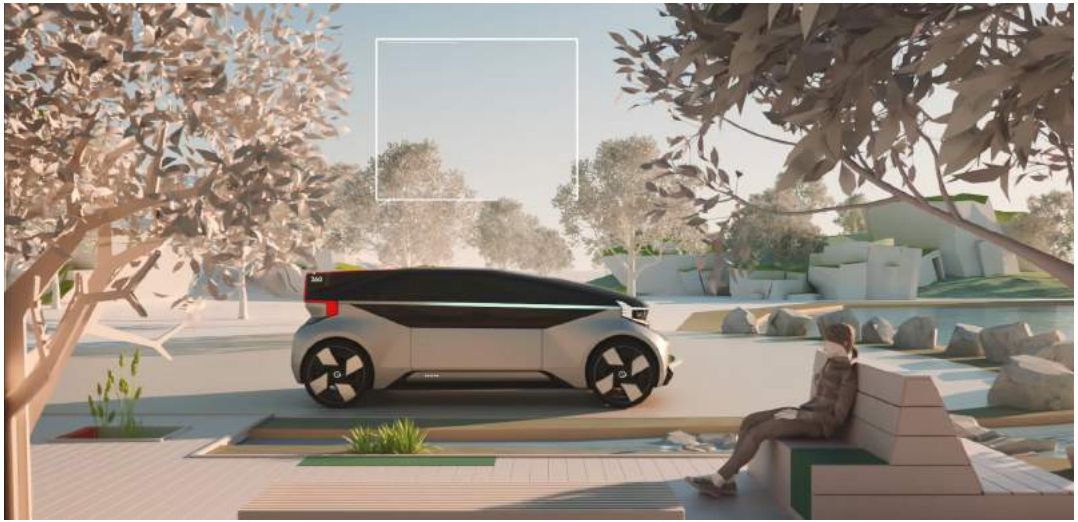
巡航cruise

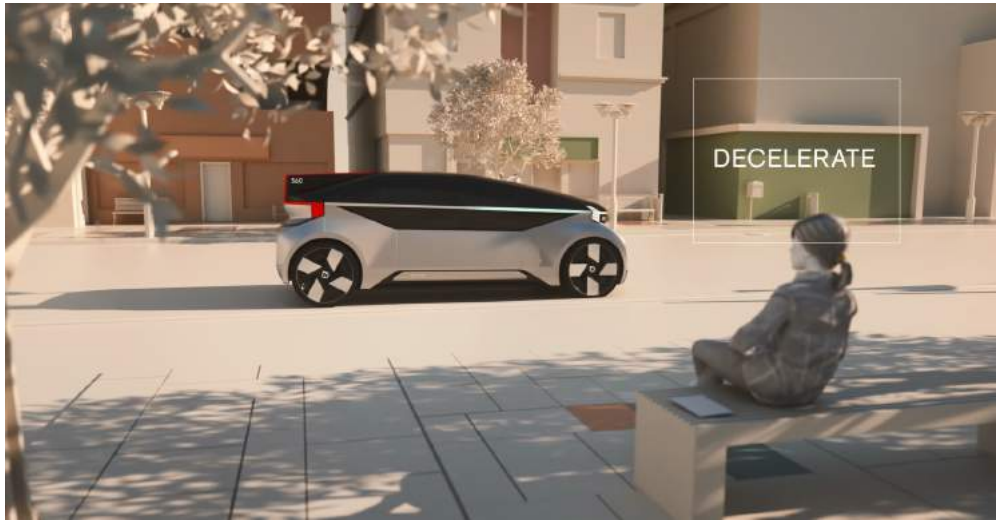


行人探测Pedestrian detection

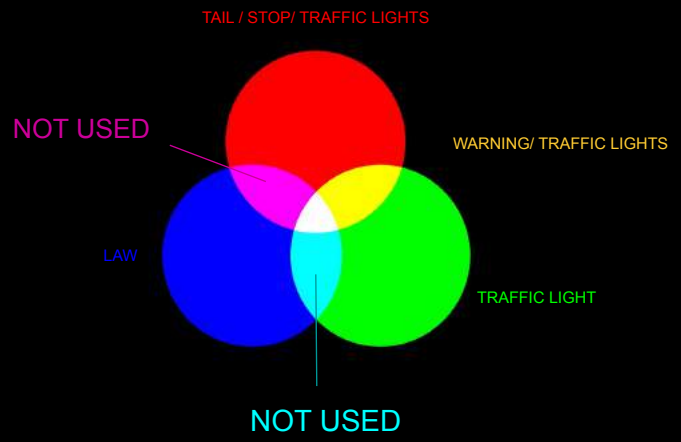


減速deceleration





为什么选择绿宝石色
Why turquoise ?



谢谢Thank you