

Innovation Needs Good Regulation 创新需要良好的法规

Vehicle-Level Laboratory Testing Procedure for Adaptive Systems 自适应系统在整车实验中的测试流程

*Geoffrey R Draper
GTB President*

*(Personal views - not intended to represent the GTB opinion)
(仅代表个人观点)*

The New Regulatory World

新控制规则

- ✓ Lighting Systems – Not Devices
照明系统要求 — 非设备
- ✓ Performance–Based Global Technical Requirements
性能为基础的全球技术要求
- ✓ Technology Independent Requirements
技术独立要求
- ✓ Objective Testing Requirements
客观测试要求
- ✓ “Real World” Testing of the Whole System
整体系统的实地测试要求

Lighting **Systems** - SPECIAL ISSUES

照明系统的特殊问题

Starting Point
初始点

The Real Road /
Traffic Scene
真实道路/交通场景



How to verify that
the system operates
correctly and does
not cause
discomfort to other
“drivers”

如何验证系统正确行
且不造成司机不舒适

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Cameras and other
sensors to capture the
scene
摄像设备捕捉场景

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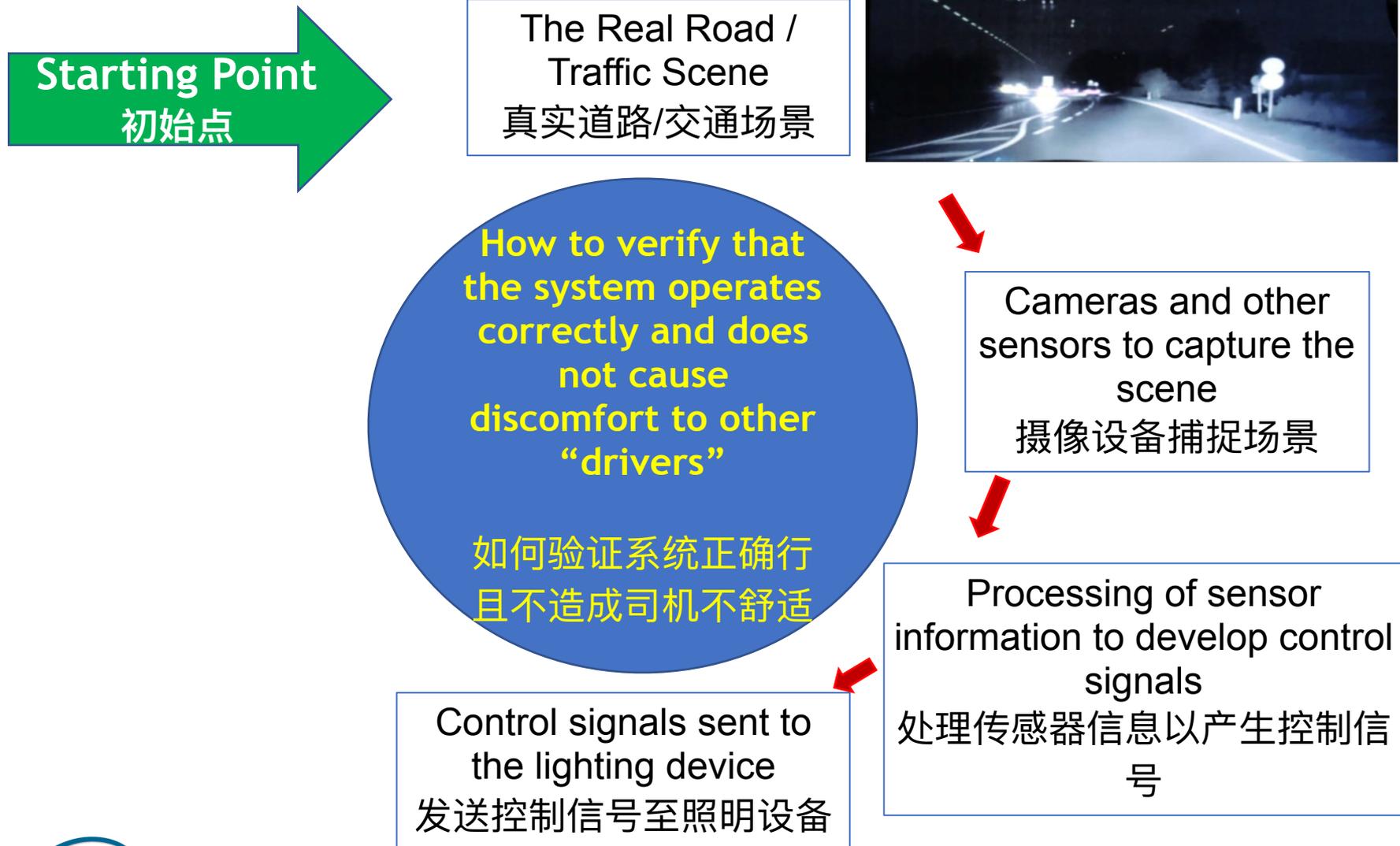
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Cameras and other
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摄像设备捕捉场景

Processing of sensor
information to develop control
signals
处理传感器信息以产生控制信
号

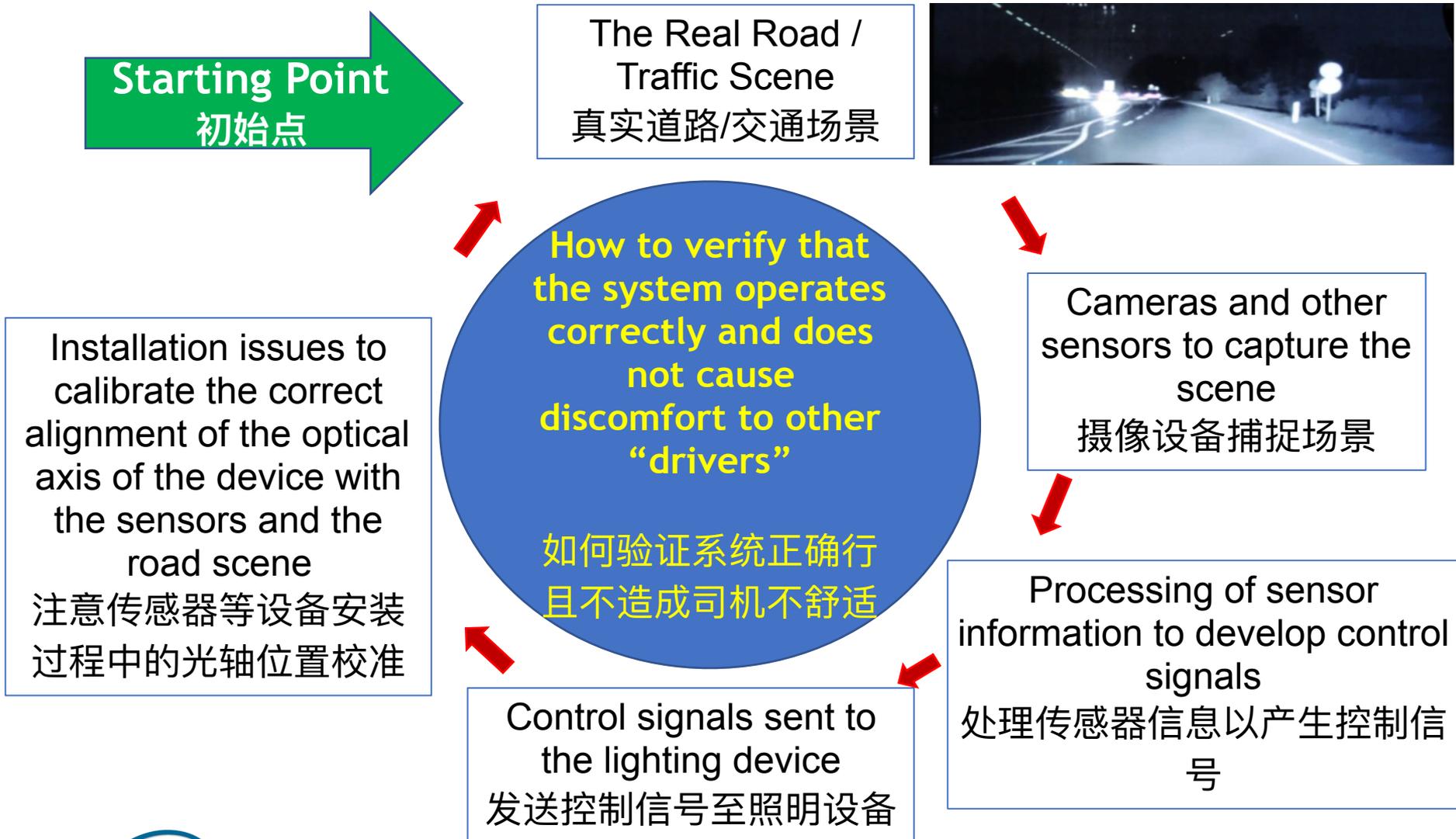
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Lighting Systems - SPECIAL ISSUES

照明系统的特殊问题



“Real World” Testing 实地测试

UN Regulation 48 Requirements
联合国第48条要求
Subjective assessment by a type-approval inspector
经过类型批准检查员确定的主观评价



This is not acceptable for regulatory systems based upon self-certification
不适用于基于自我认证的评价系统

NHTSA “On-road dynamic test track procedure”

美国高速公路安全管理局 道路动态测试轨道程序

SAE J3069 test track procedure

测试轨道程序



Problems of repeatable photometry on a test track in “open air”

室外轨道测试中需要进行重复光测试的问题

High investment in test track and facilities and high operating costs

测试轨道和设施的高投入和高运行成本问题

Reproduce the “on-road dynamic test track procedure” in a photometric laboratory
在光学实验室中重现道路动态测试轨道程序



Accuracy of a photometric laboratory – repeatable results
光学实验室准确性
– 可重复性测试结果

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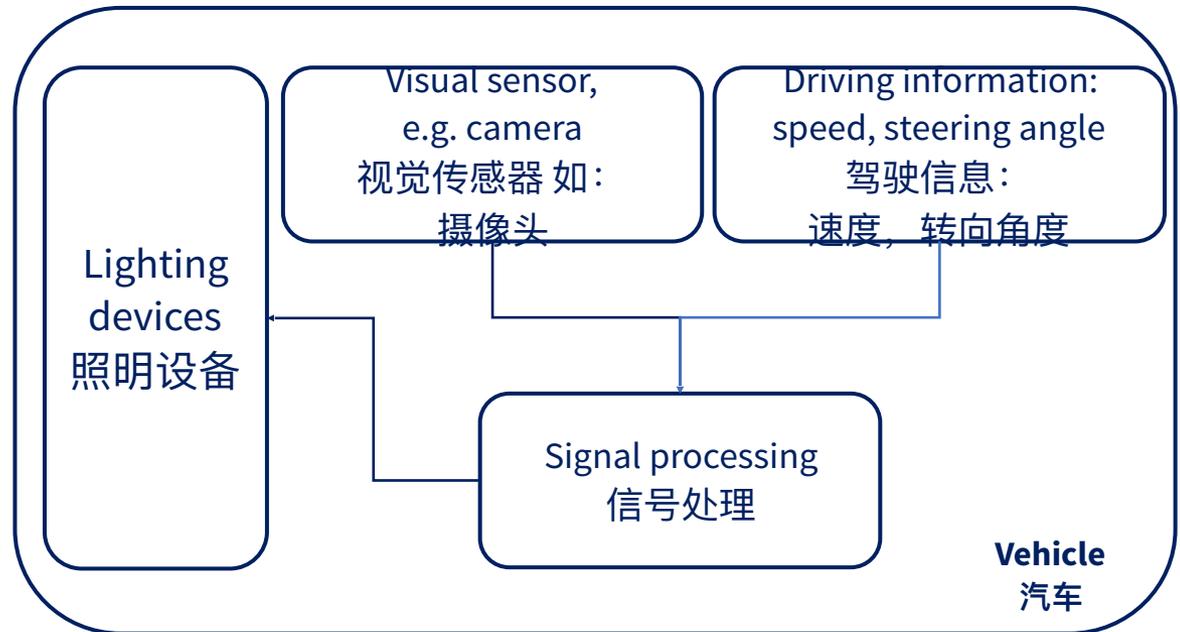
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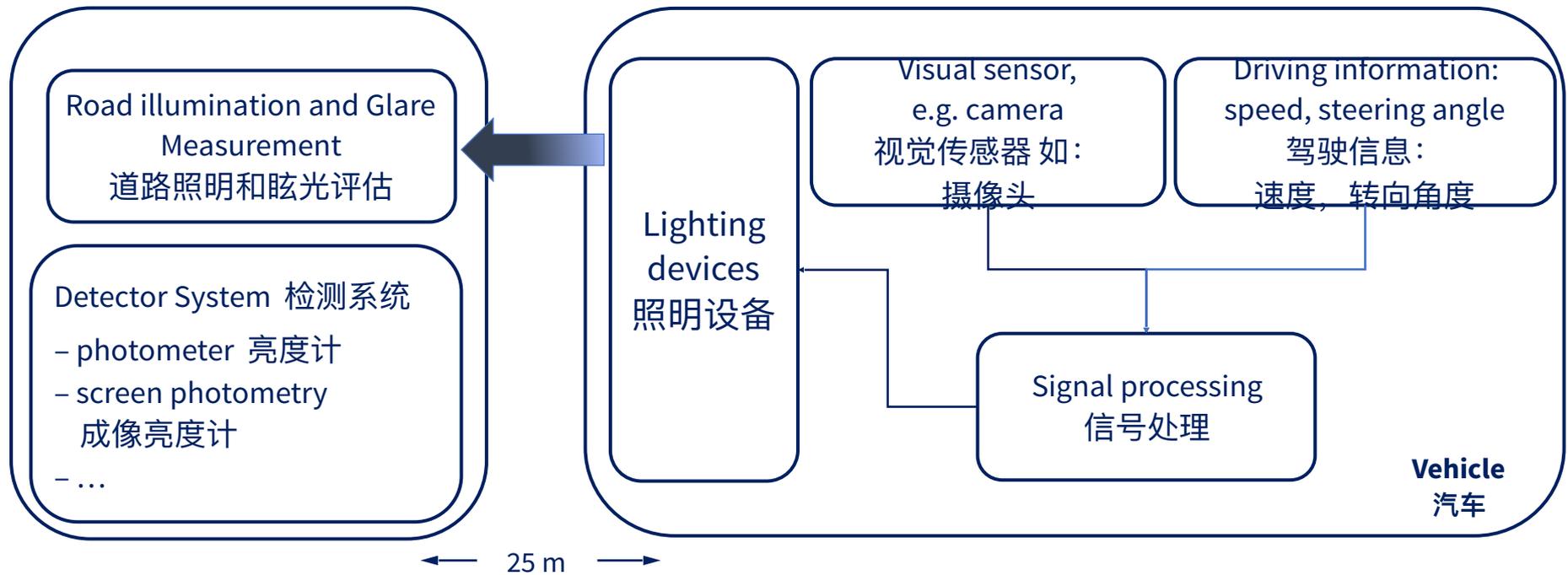


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Vehicle Level Laboratory Testing 整车实验室测试



Vehicle Level Laboratory Testing 整车实验室测试

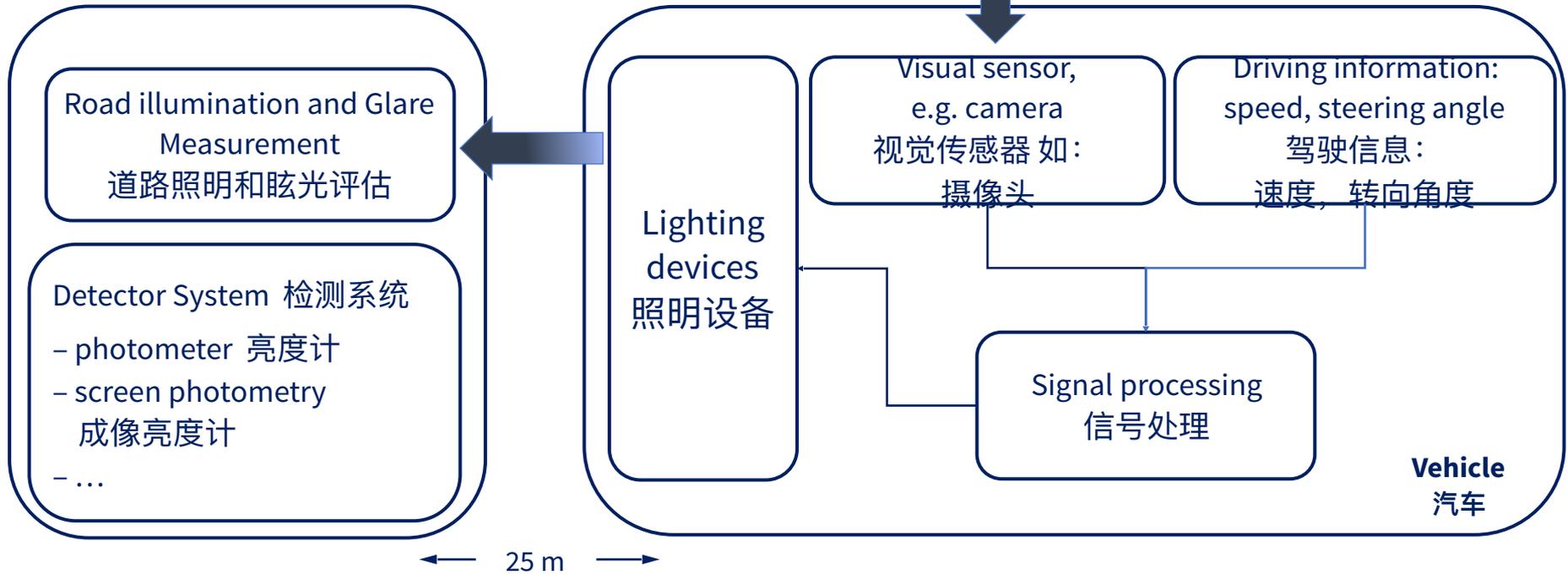


Vehicle Level Laboratory Testing 整车实验室测试



Stimulant 视觉刺激
(road scene 道路场景)

Distance tbd 距离
(depth of focus 焦点深度)



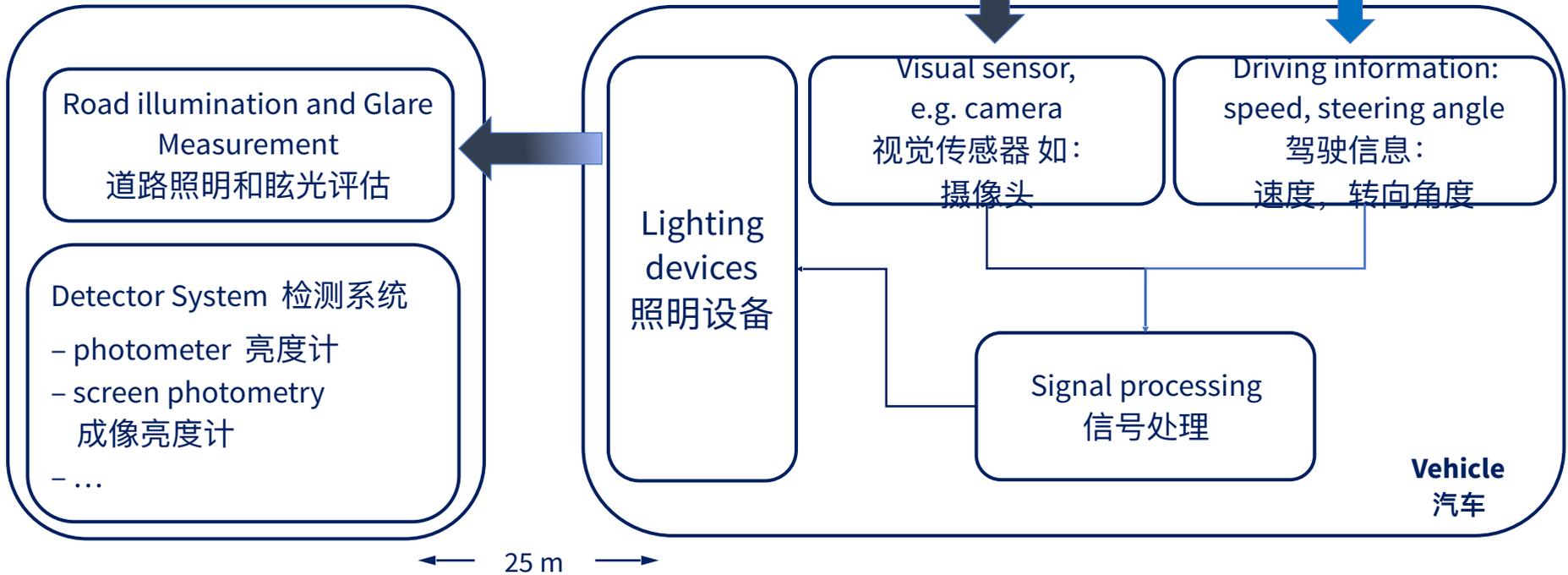
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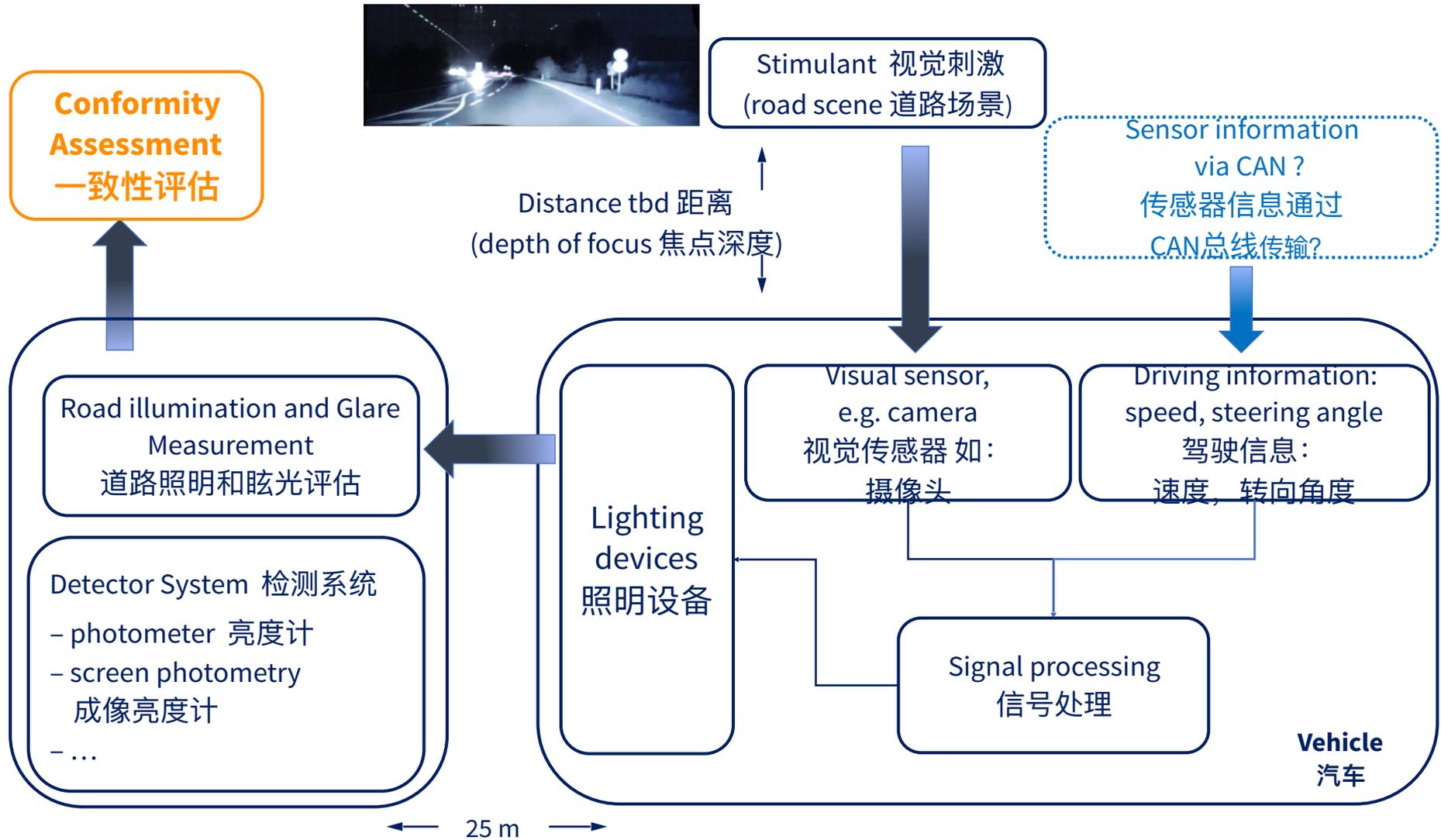
Stimulant 视觉刺激
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Sensor information
via CAN ?
传感器信息通过
CAN总线传输?



Vehicle Level Laboratory Testing 整车实验室测试



GTB Vehicle Level Laboratory Testing Procedure Taskforce

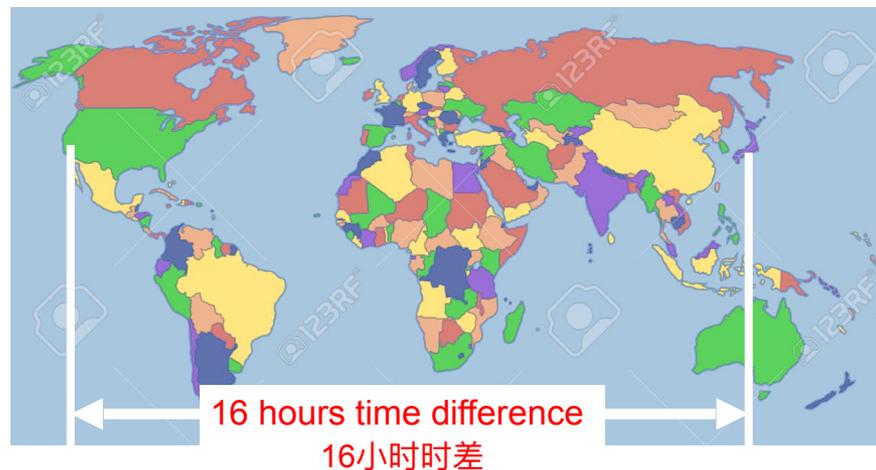
GTB整车实验室测试程序专题组 GTB VLLTP Taskforce

Chair 主席 : Geoff Draper
Secretary 秘书 : Thomas Reiners
WebEx support 网络会议支持: Davide Puglisi

Wide Participation (West Coast USA – Japan)
广泛参与 (美国西海岸—日本)

Two Web Meetings (WebEx) 两次网络会议

- 11 March 2019 (55 people) 2019.3.11 (55人)
- 12 April 2019 (31 people) 2019.4.12 (31人)



Next Sessions 下一届会议

- 29 May 2019 (WebEx) 2019.5.29 网络会议
- **Two-day Workshop : 15-16 July 2019 (Karlsruhe, Germany)**
为期两天的研讨会：2019 7.15-5.16 (德国卡尔斯鲁厄)

GTB Vehicle Level Laboratory Testing Procedure Taskforce

GTB整车实验室测试程序专题组

Main Issues 主要问题

- Type of Facility:
Purpose-built large “light-tunnel” / “25 metre” Photometric Laboratory?
设施类型：
如何建造大型“光隧道”/ “25米”光学实验室？

GTB Vehicle Level Laboratory Testing Procedure Taskforce

GTB整车实验室测试程序专题组

Main Issues 主要问题

- How to “stimulate” the camera in the laboratory?
如何给实验室中的摄像头设定视觉刺激？

GTB Vehicle Level Laboratory Testing Procedure Taskforce

GTB整车实验室测试程序专题组

Main Issues 主要问题

- How to take other sensor data into account?
如何考虑其他传感器数据?

GTB Vehicle Level Laboratory Testing Procedure Taskforce

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Main Issues 主要问题

- Do we need to mount the vehicle on a dynamometer to include steering angle, speed and other dynamic characteristics?

我们是否需要将车辆放置在测力计上来考虑转向角，速度和其他动态特性？

GTB Vehicle Level Laboratory Testing Procedure Taskforce

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Main Issues 主要问题

- Is there a possibility to carry out live photometry with pre-recorded sensor data?
是否有可能使用预先记录的传感器数据进行实时测光?

Vehicle-Level Laboratory Testing Procedure for Adaptive Systems

自适应系统在整车实验中的测试流程

We need specialist input for this very important project
我们需要为这个非常重要的项目提供专家意见

We need to support the regulators to define a globally acceptable procedure
我们需要支持监管机构确定出全球通用的流程

Thank you for your attention 谢谢聆听

*Geoffrey R Draper
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