



*Private company, focusing on
R&D of sensor based technology
and related services for transport
infrastructure and mobility
applications*

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Presenting

- E8 Borealis contributions
- LIDAR Technology
- Perception system
- Cooperative messaging



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Connecting Europe Facility

Utfordringer på E8



E8 Borealis, ITS Pilot addressing

- Challenging weather and road conditions
- Monitoring of traffic and events
(e.g. slow or stationary vehicles)
- Testing of new technologies

(*Challenge accepted* :)





E8 Borealis, ITS Pilot

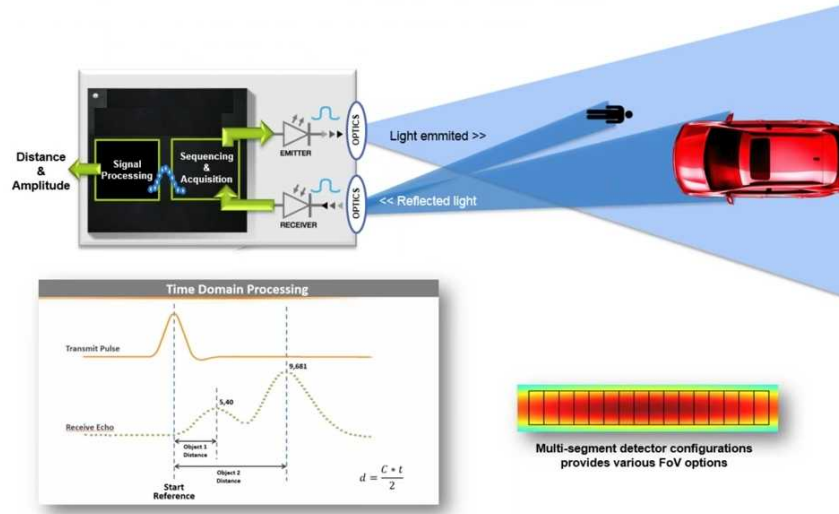
ITS Perception developed and tested a new roadside sensor for ITS applications based on LiDAR technology and image analysis

This sensor can provide

- Automatic Incident Detection
- Event based notifications (DENM)



MULTI-SEGMENT SOLID-STATE LIDAR SENSOR



(Light Detection And Ranging)

Optical, Time-of-Flight sensing technology

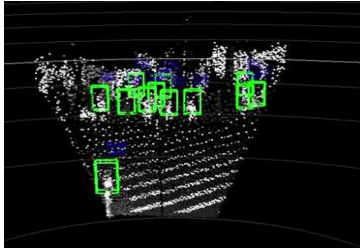
- Pulsed, «invisible» light (905nm)
- LED – solid state (no moving parts)
- Fixed, diffuse illumination
- Multi-segment, multi-object detection
- Digital Signal Processing

Robust, low-cost, low-power technology



Perception system based on

- LIDAR, for Dynamic Object Detection
 - Precise distance to objects
 - Relative positioning of objects
 - Object speed and direction
- Image analysis (Neural network) for
 - Object classification and recognition





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2019-03-29 17:19:47:
{"vendor":"its perception",
"type":"Lidar", "data":
{"datetime":
"2019-03-29T17:19:47.000Z",
"latitude":"69.180298",
"longitude":"20.749161",
"message":"DENM cause 94.2,
Stationary vehicle"}}}
```

Cooperative messaging

- Event based notifications of e.g.
 - Slow traffic
 - Stationary vehicles
- Flexible integration
 - DatexII, AMQP
 - IoT (MQTT,..)
 - DSRC, C-V2X





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Thank you

