

# Development of an Operation Strategy for Plug-in Hybrid Electric Vehicles

Long-term Prediction and Adaptation based on  
Past Vehicle and Driver Data

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# Rethinking Passenger Vehicles



## Challenges

- CO<sub>2</sub>
- Pollutants
- Noise
- ...



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# Hybrid Electric Vehicles

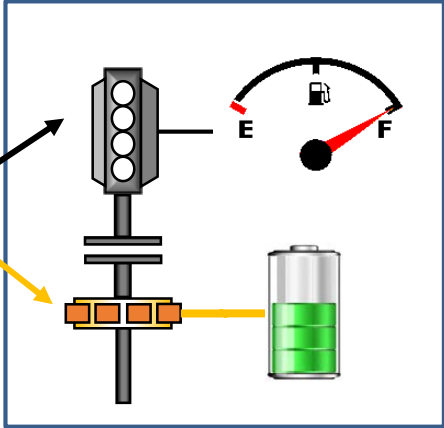


Source: BMW

Topology



Demanded Power



Operation Strategy

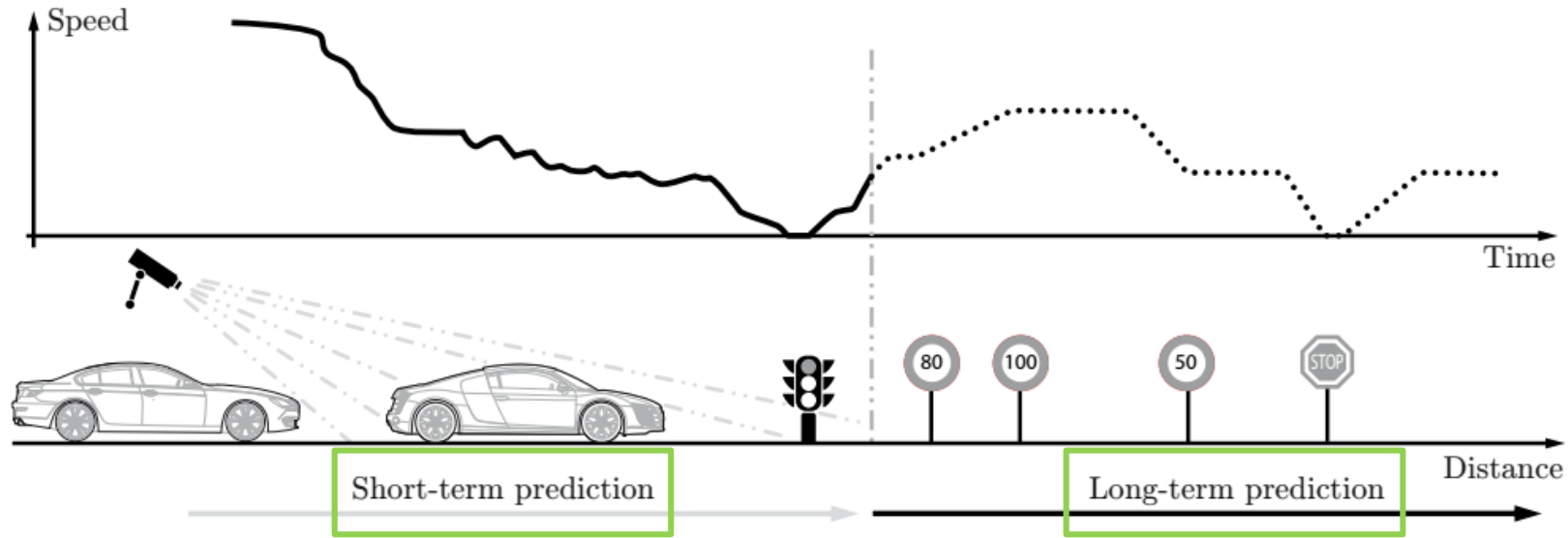


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## 2 Prediction Levels



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# Long-term Prediction



Fixed-location Information



Driving Style

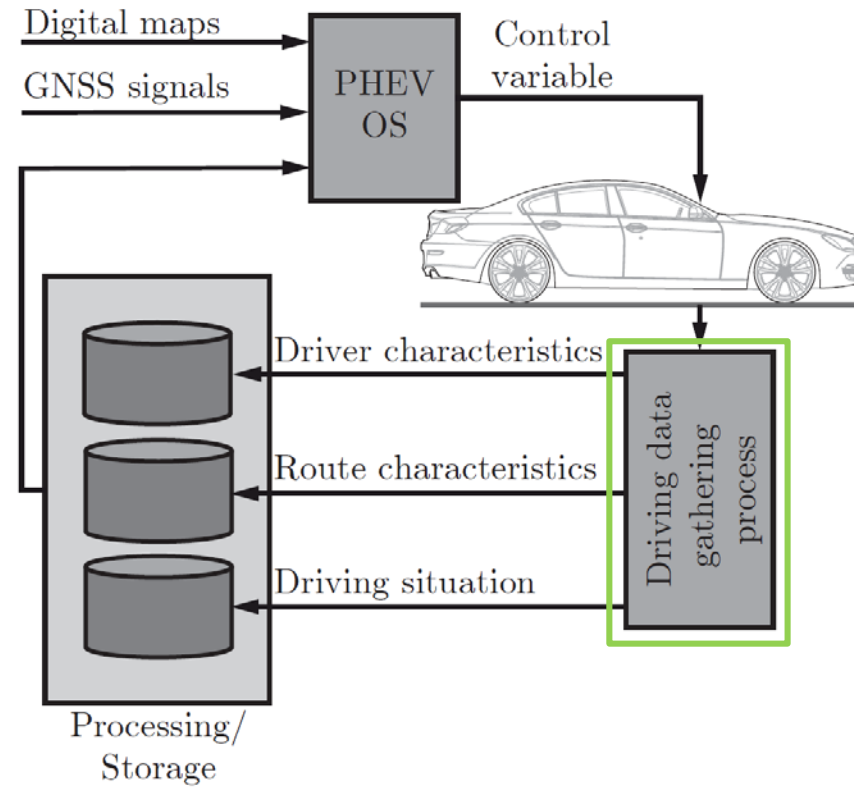


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# Driving Data Collection



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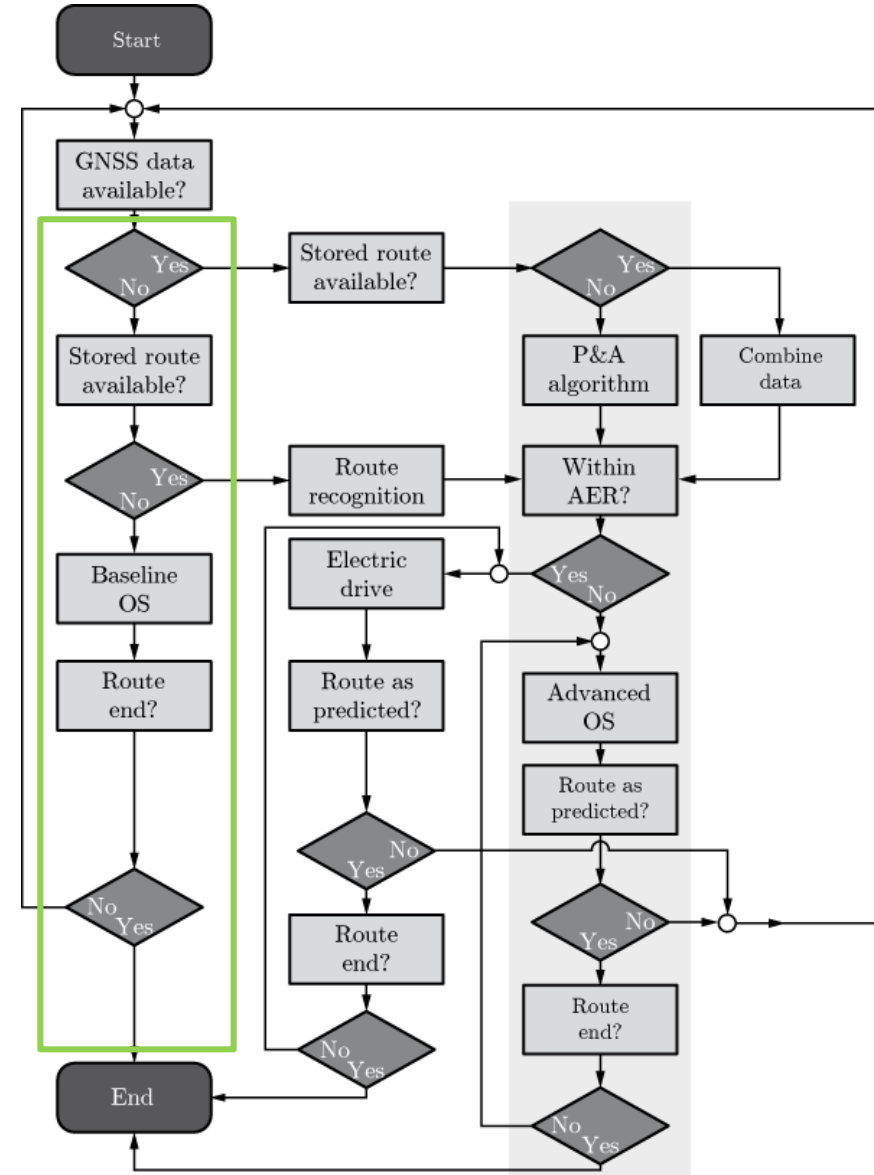
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# Holistic Energy Management Controller

3 Control Paths:

1. Rule-based



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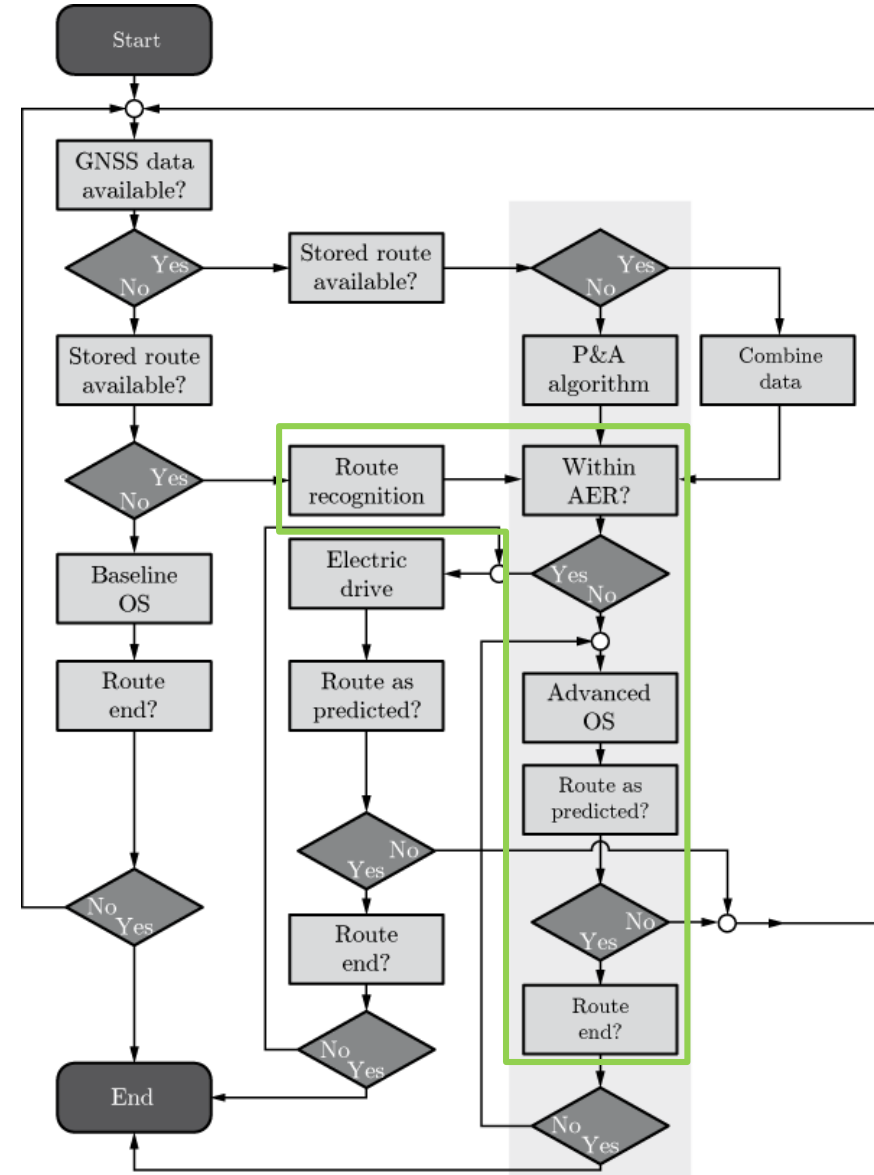
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# Holistic Energy Management Controller

3 Control Paths:

1. Rule-based
2. Route Recognition



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# Benefits



Increase Fuel Efficiency



Maintain Electric Energy



Enhance Performance



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