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Digital Technologies Enabling Connected and Automated Driving

What's in a Map?

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Location, Location, Location...

- Automated vehicles need location information basically for three things:
 - To know **where they are**
 - To know **where to go**
 - To know **how to get there**
- But they can benefit from location information in many more ways:
 - To anticipate **what's around them**
 - To anticipate **what's ahead of them**
 - To learn **what other cars (or drivers) did**

**Of course,
this is not your traditional navigation map any more.**



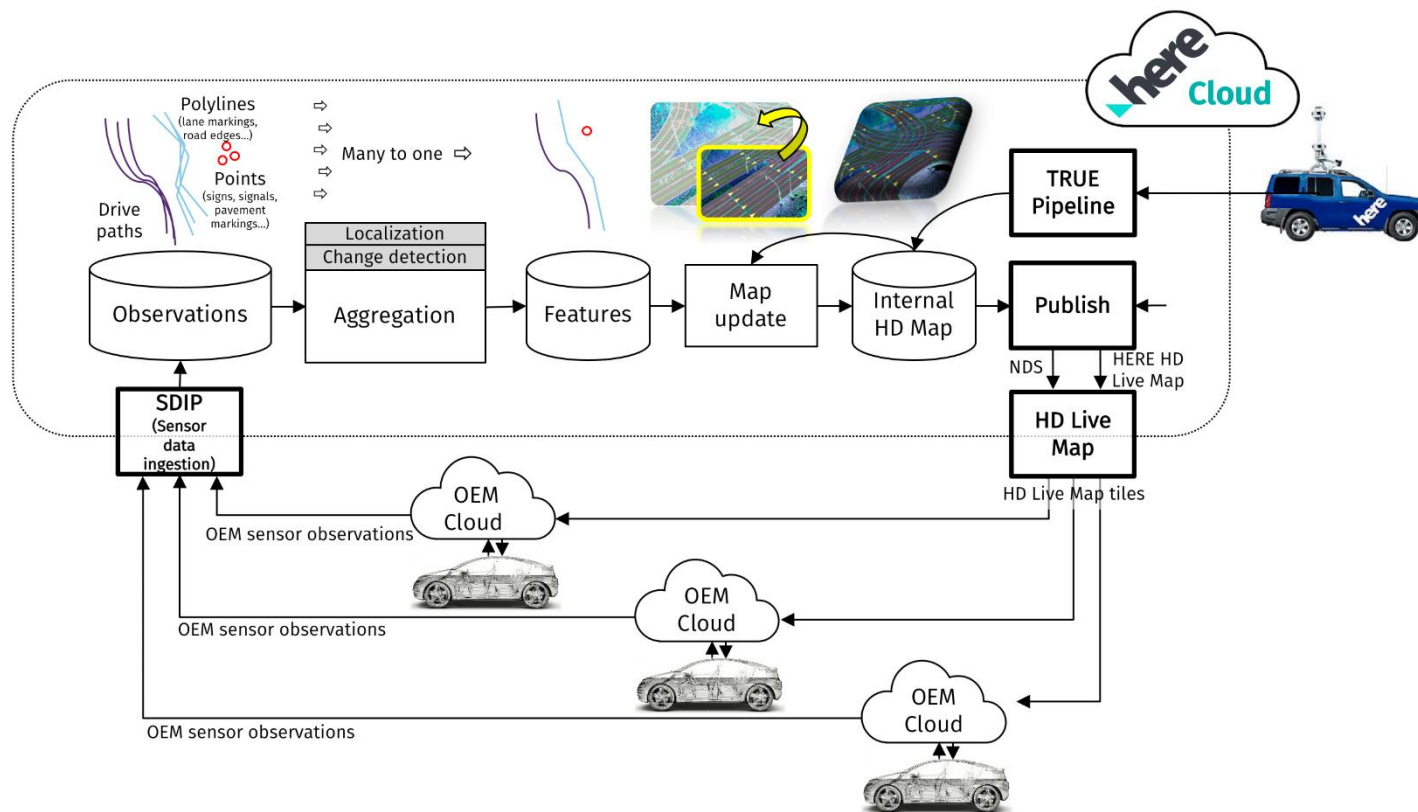
From a static map to a “reality index”...

- Maps today
 - Mostly for **human consumption**
 - Updated every **once in a while**
 - Cartographed by **special surveillance vehicles** with human editing
- “Maps” of the future
 - Mostly for **machine consumption**
 - Up to date in **real time**
 - Cartographed by **regular vehicles** on the road with **automated data processing**

**Vehicle sensors and vehicle data
fuel vehicle automation.**



Self-learning high-definition maps





Issues to Consider

- Vehicle connectivity
 - Vehicles increasingly come connected as standard
 - Attractive network coverage, bandwidth and cost are keys to success
- Privacy and security considerations
 - “Privacy by design” for vehicle information leading to trust
 - Sensor data collection in public spaces
- Give-and-get models
 - Willingness to share data
 - Ability to use data

Scalable and scaling approaches are key.