The advantages of using

NDS.Live

for

Intelligent Speed Assistance (ISA)

an NDS Association webinar
February 4, 2021

Navigation Data Standard

NDS.Live webinars

Today:

1. **The advantages of using NDS.Live for Intelligent Speed Assistance (ISA)**
   - Recording on YouTube soon.
     Link to video will be posted on LinkedIn and the NDS Association website.
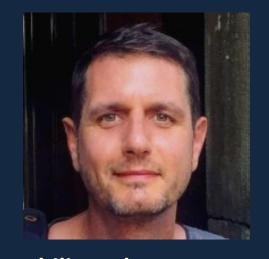
Upcoming webinars

1. **What is NDS.Live?** → Feb 25, 2021 09:00 AM

2. **ISA: Reduce bandwidth using NDS.Live** → Mar 11, 2021 09:00 AM

3. **NDS.Live: Deliver data layers the smart way** → Mar 25, 2021 09:00 AM

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Your hosts and speakers today

Nico Glorius

Product Manager
Data Delivery Services
NavInfo (Europe) B.V.
&
Vice Chairman of the NDS Association

Philip Hubertus

Senior Product Manager
Automotive Products
HERE Technologies

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Agenda

- ISA regulation (15 mins)
  - What is it, timeline
  - Why does it need map data
  - Freshness – need for connected map
  - ISA user experience
- NDS.Live (25 mins)
  - Basics
  - Layering along SAE levels and features/classes of cars
  - NDS.Live – map data services for connected cars

- Q&A (20 mins)

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ISA – Intelligent Speed Assistance

Source: European Transport Safety Council

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ISA – EU Regulation

- ISA is an in-vehicle system that shall support drivers with complying with the speed limits on any European road
- Starting July 2022: Required for all new to market (SOP) vehicles in the EU
- Starting July 2024: Required for all newly sold vehicles in the EU
- Applies to cars, vans, trucks, and buses
- Mandated across EU27 + remote territories
- Minimum 7 years of map updates free to users
- Minimum of a total of 14 years of map update

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ISA – EU regulation vehicle approval requirements

- >90% quality target (camera or camera + map)

- Type approval testing will be executed based on a real-world test drives between 300 and 500 kilometers

- Testing on a mix of highways/motorways, non-urban, and urban roads – at least 25% each type and with at least 80% quality target reached for each

- Testing against 5 explicit sign types AND 5 implicit sign types (incl. variable speed signs)

- at least 15% of the roads need to be driven in darkness, the rest in daylight

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Example of Speed Limit Assistance

When the speed limiter is active, the acceleration pedal is not accepting foot pressure to accelerate the vehicle over the speed limit. Pressing the accelerator significantly will disable the limiter and accelerate the vehicle. An icon in the cluster is blinking as a visual warning.
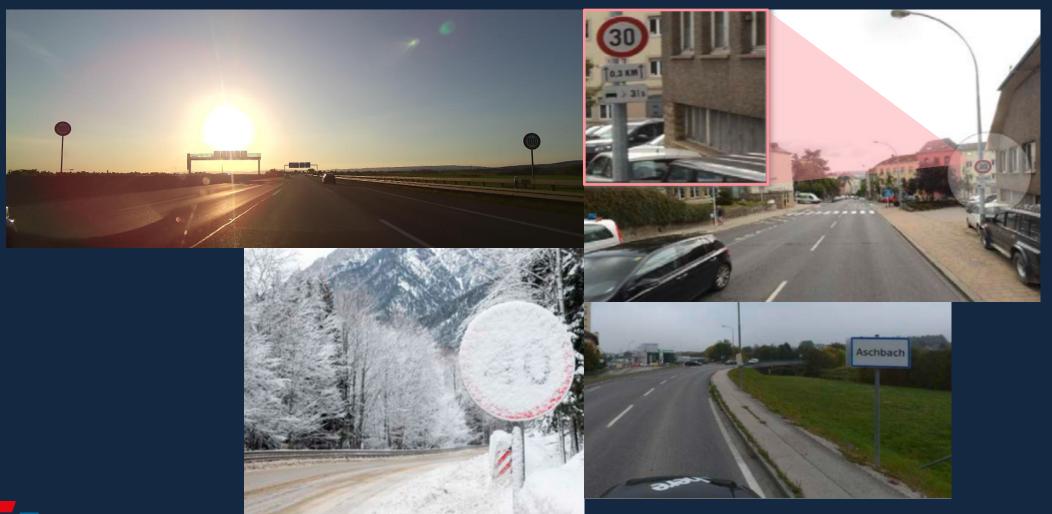
Navigation Data Standard
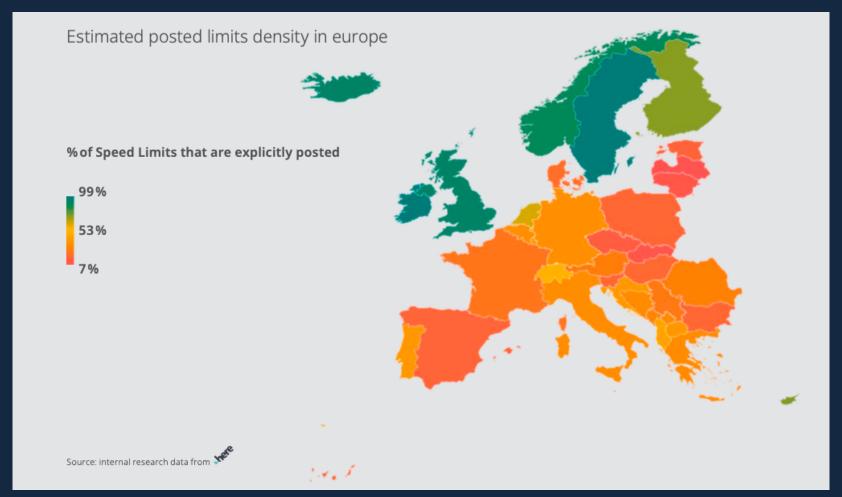
This may happen when you overrule or switch off ISA

... and that is just a speeding ticket.

Much worse is an accident because of driving over the speed limit.

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ISA – Why map data is required

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ISA – Why map data is required

Estimated posted limits density in europe

% of Speed Limits that are explicitly posted

99%
53%
7%

Source: internal research data from here

ISA – Why fresh map data is required

- Up-to-date speed limits are required for ISA systems to reach a high reliability

- Speed limits are changing constantly
  - Variable speed signs
  - Temporary speed signs due to constructions
  - Country-wide implicit regulations are changing

Speed limits change at a rate of 10 % per year

- Consumers are not used to do manual map updates (nor will they be excited about it)

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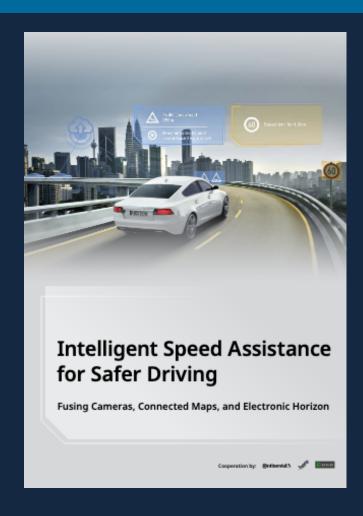
How to keep the map data up to date

- Connectivity <u>not used</u>
- Onboard map
- Map covering full market or relevant regions
- Manual map updates
- May leverage existing navigation solution

- Connectivity used for map updates
- Onboard map with smart logic: stores relevant area, streams and caches additional data on a per needs basis
- Part of full navigation, ADAS, or can be ISA only

Further reading: ISA – White Paper by Continental, Elektrobit, and HERE

Intelligent Speed Assistance
for Safer Driving

Fusing Cameras, Connected Maps, and Electronic Horizon

White Paper covers the following topics:
- What is Intelligent Speed Assistance (ISA)?
- ISA History, Regulations, and Future Implications
- Real-World Challenges
- Implementation Architecture Scenarios
- Electronic Horizon + Maps
- Conclusion
- Further Resources

→ http://nds.to/isa-wp

Navigation Data Standard

NDS e.V. (Navigation Data Standard) …

… world-wide interoperable standard for map data in automotive eco-systems

… has been founded in 2008

… by OEMs, Application, Service, Map data & compilation providers

… products have been available in the market since 2012

… used globally in ADAS and infotainment systems

Navigation Data Standard

NDS Association members

The NDS format specification is defined by the members of the NDS association.
This includes world leading OEMs, system vendors, solution providers, and navigation data providers.

From NDS.Classic to NDS.Live

NDS.Classic …

… Standard of a Physical Storage Format for map data based on SQLite

   … supports HAD based on HD maps

     … Increased need for map freshness due to ISA, ADAS & AD

NDS.Live …

… development has been started as distributed map data system

   … based on the successful and proven concepts of NDS.Classic

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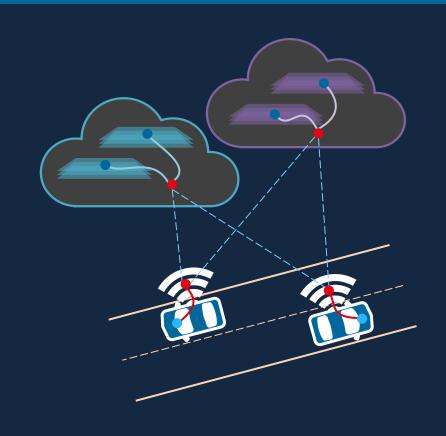# „NDS.Live is not a database, it is a distributed map data system"

NDS.Live - Basics

NDS.Live defines …

… service interfaces to retrieve map data

… from data layers to …

… data containers

… in a smart way!

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SmartLayer services allow to distribute map layers …

… in flexible configurations

  … containing live, dynamic & static data

    … over highly scalable delivery platforms

      … as data tiles, as paths, as objects

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NDS.Live - SmartLayer

ISA only   ADAS   Infotainment   HAD

HD Layer

Infotainment Layer
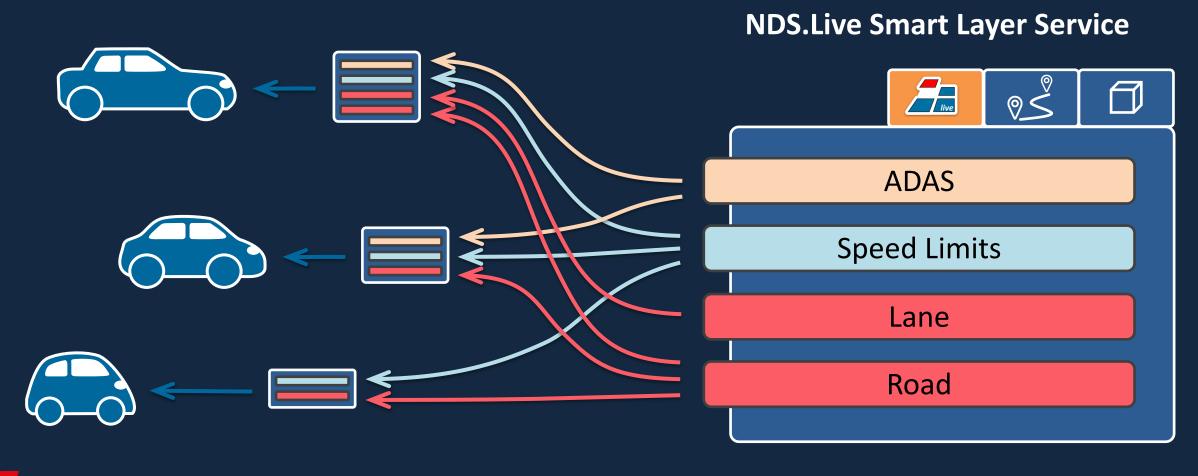
ADAS Layer

Speed Limit Layer

Road Network (SD)

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NDS.Live - SmartLayer

NDS.Live Smart Layer Service

ADAS

Speed Limits

Lane

Road

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NDS.Live is ready now!

NDS.Live Joint Development Team

is working on first SD & HD map

ADAS services and clients!

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Q&A Panel

Martin Schleicher
Head of Software Strategy at Continental and Chairman of the NDS Association

Nico Glorius
Product Manager Data Delivery Services at NavInfo (Europe) B.V.
and Vice Chairman of the NDS Association

Markus Kerper
Navigation Content & Operations at Volkswagen Group Car.SW Organization

Fabian Klebert
Technical Coordinator for the NDS Association

Martin Pfeifle
CTO at NNG

Philip Hubertus
Senior Product Manager Automotive Products

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Request an evaluation license for the NDS.Live spec from:

Markus Junker

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Contact the NDS Association

www.nds-association.org

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