



## **45<sup>TH</sup> ASECAP STUDY & INFORMATION DAYS 2017**

# The Concession model in the decarbonization era: preparing the infrastructure of the future

*Pullman Paris Montparnasse Hotel*  
*29-31 May 2017*

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**PARIS 2017**

**45<sup>TH</sup> ASECAP STUDY & INFORMATION DAYS 2017**

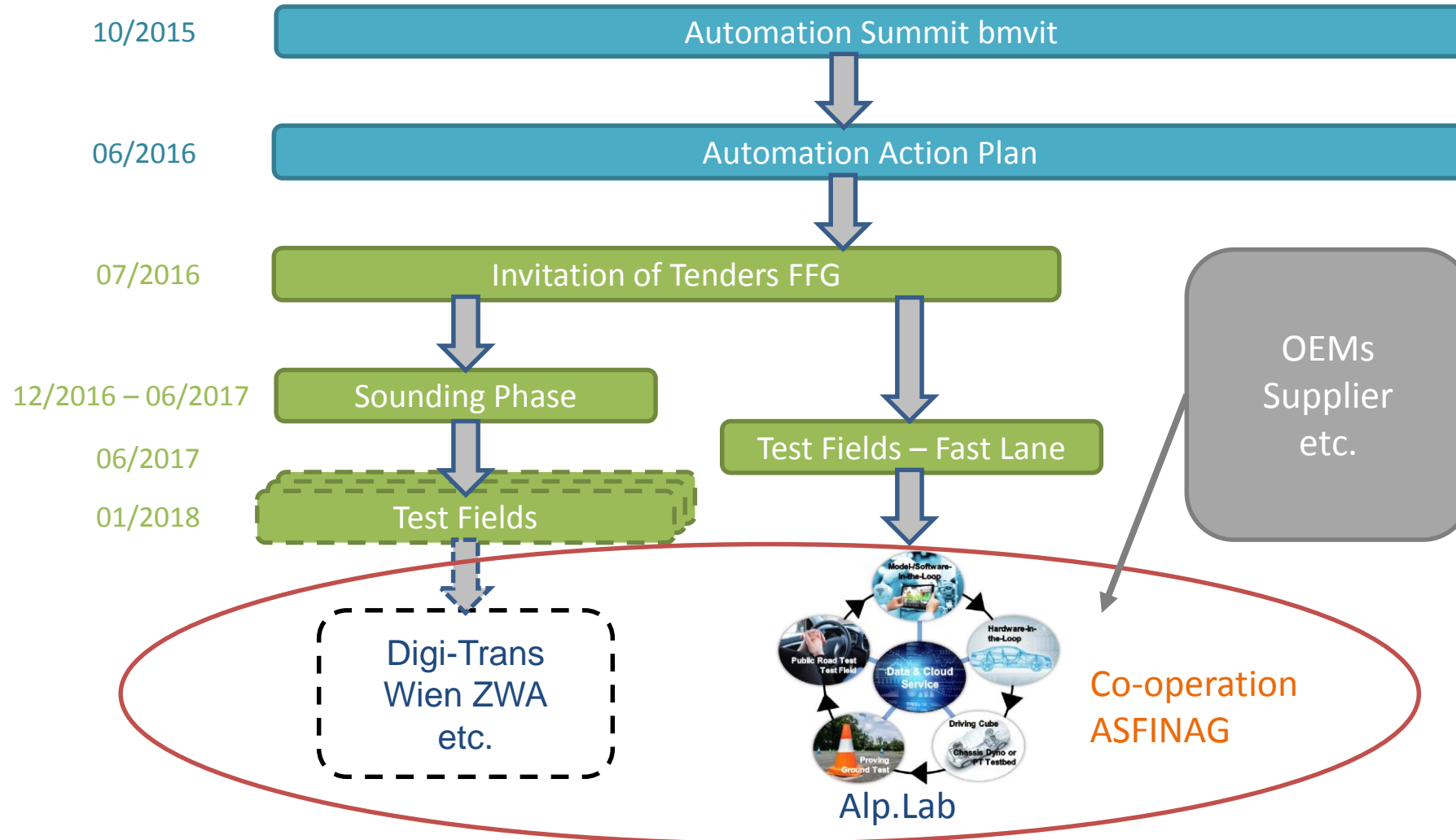
**Automated driving**

*Ing. Mag. Bernd Datler*  
*ASFINAG Maut Service GmbH*

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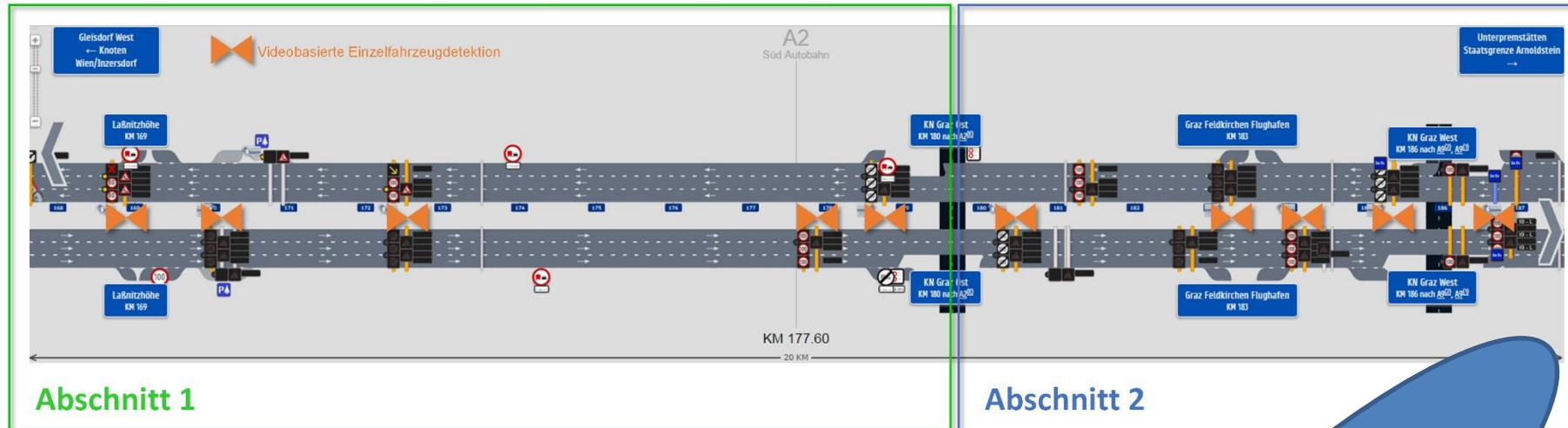


# National Automation Action



# Test track A2

Motorway Exit Laßnitzhöhe - Node Graz Ost, Node Graz Ost – Junction Graz West

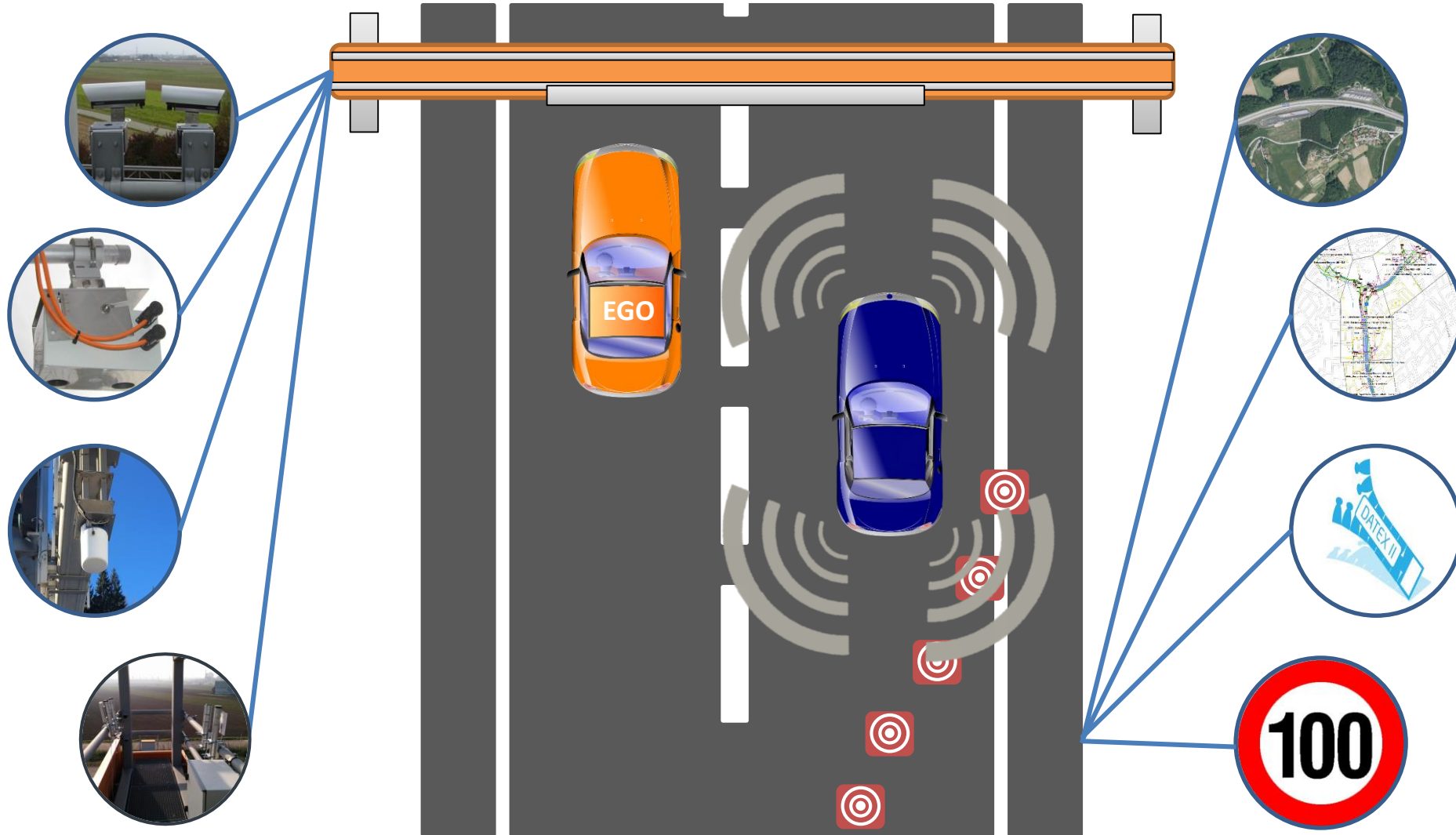


- IKT infrastructure, Fibre Network
- HD video cameras with detection
- Traffic sensors with single detection (cross section)
- Radar sensor (stretch-related)
- Cloud solutions for infrastructure data
- HD road map and 3D model

USP: Mixed traffic  
automated/non automated  
can be tested!

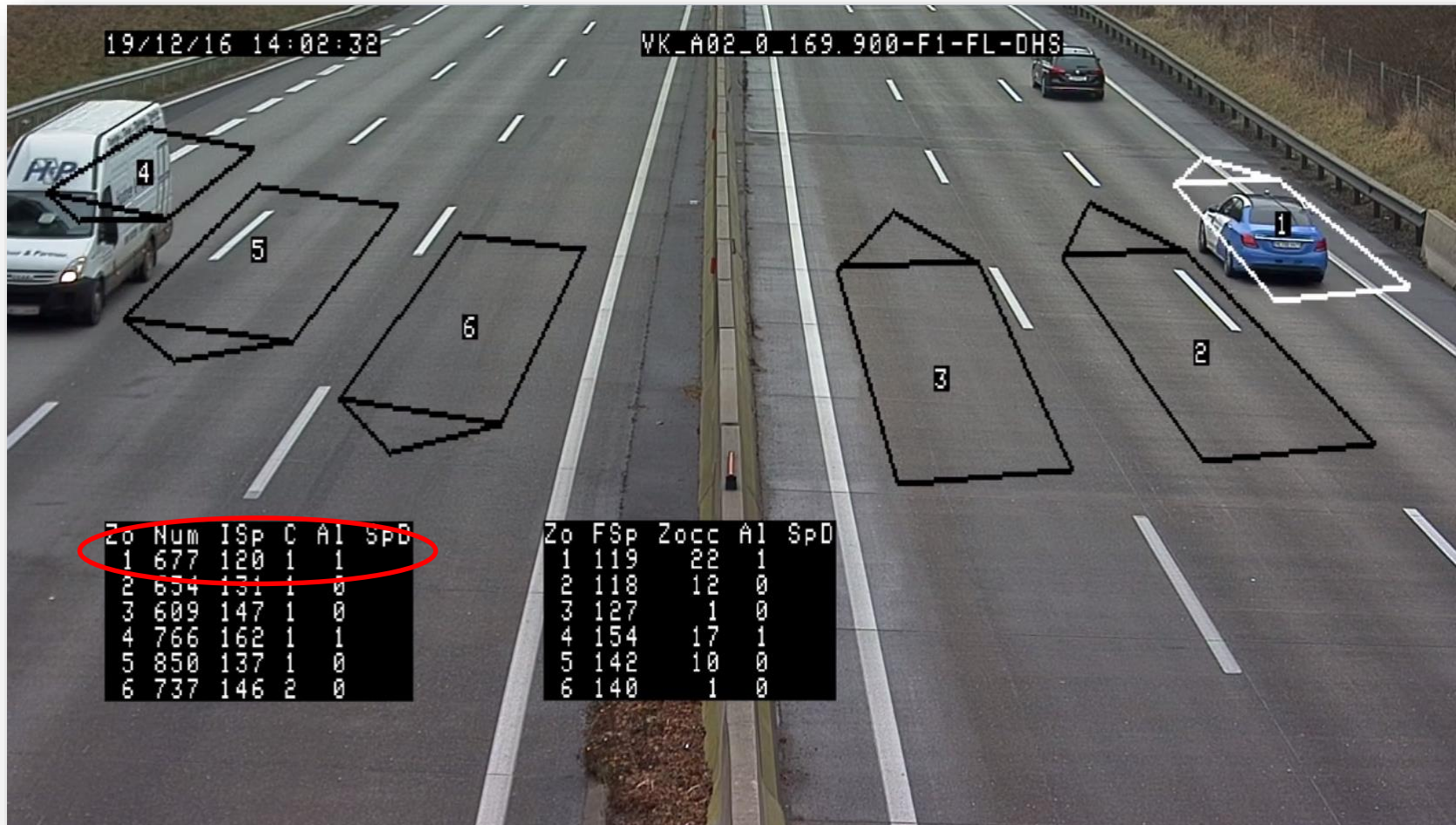
# Test track A2

## Infrastructure Data



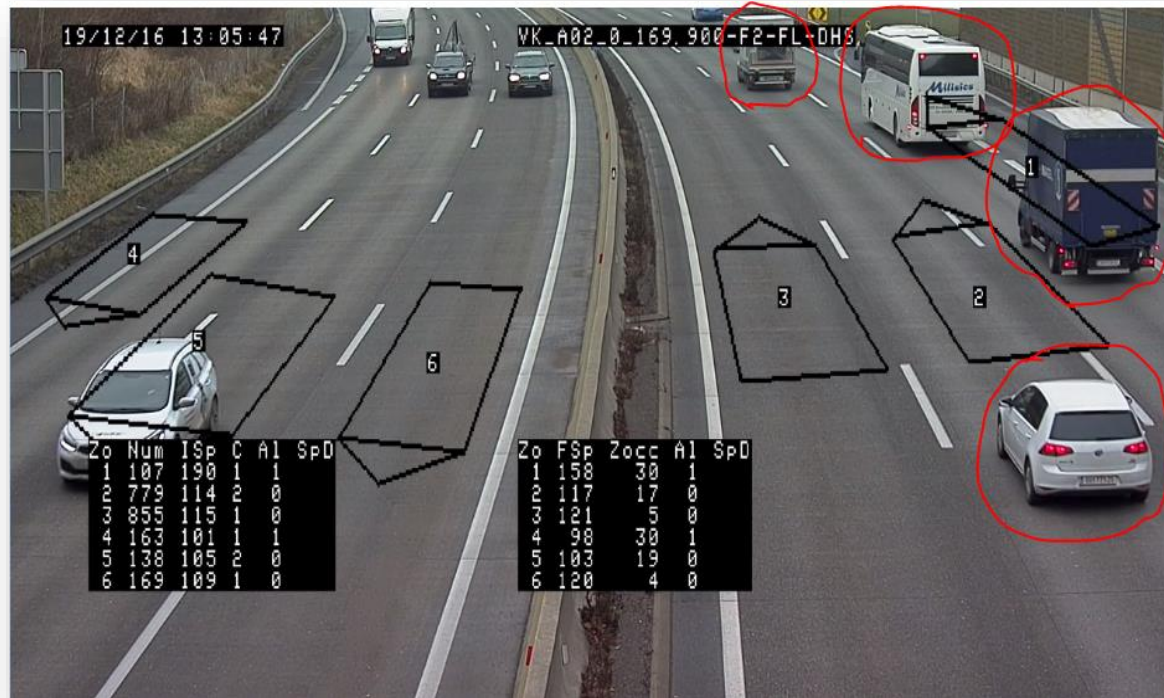
# Test track A2

## Video Detection



# Test track A2

## Single Vehicle Traffic Sensor Data



Zo	Num	ISp	C	A1	SPD	Zo	FSp	Zocc	A1	SPD
1	107	190	1	1	0	1	158	30	1	0
2	779	114	2	0	0	2	117	17	0	0
3	855	115	1	0	0	3	121	5	0	0
4	163	101	1	1	0	4	98	30	1	0
5	138	105	2	0	0	5	103	19	0	0
6	169	109	1	0	0	6	120	4	0	0

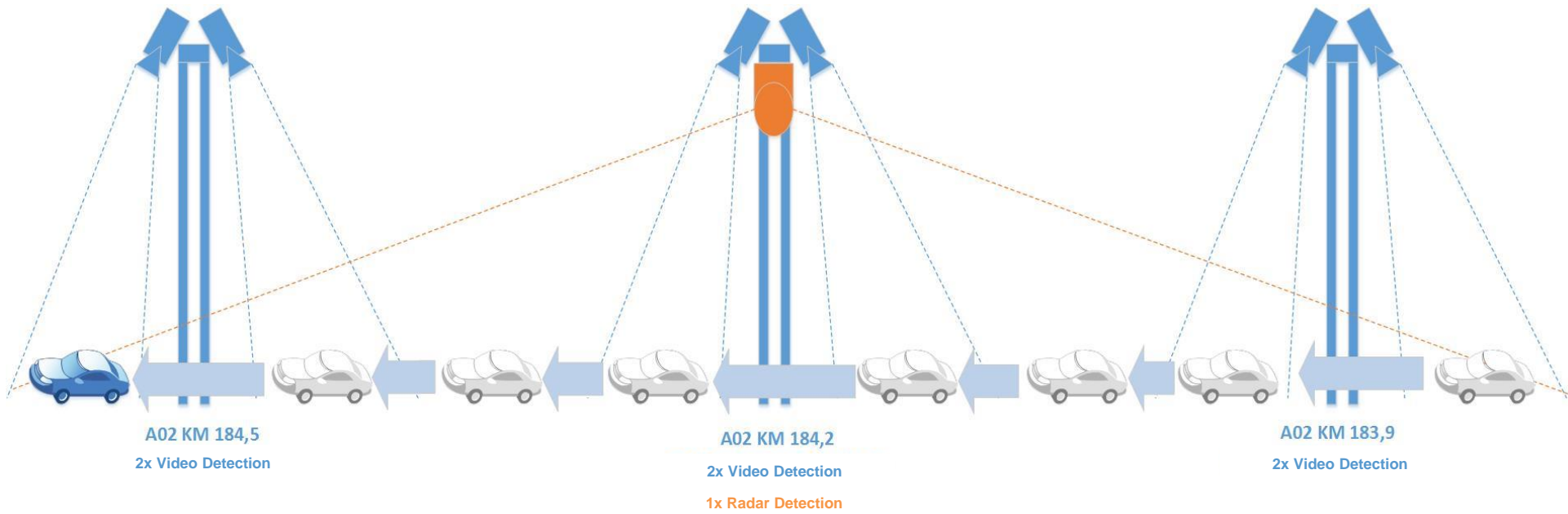
  

153	MQ_A02_1_169.897_F1	A02_1	169.897	2016-12-19 13:05:44.063	13:05:44	1.0	Pkw	Pkw	0	/	9
154	MQ_A02_1_169.897_F1	A02_1	169.897	2016-12-19 13:05:45.180	13:05:46	1.0	Pkw	Pkw	0	7	9
155	MQ_A02_1_169.897_F2	A02_1	169.897	2016-12-19 13:05:46.317	13:05:48	2.0	Lfw	Lieferwagen bis 3,5t	0	11	1
156	MQ_A02_1_169.897_F1	A02_1	169.897	2016-12-19 13:05:47.420	13:05:48	1.0	Bus	Busse	0	5	9
157	MQ_A02_1_169.897_F1	A02_1	169.897	2016-12-19 13:05:47.483	13:05:49	1.0	Lfw	Lieferwagen bis 3,5t	0	11	9
158	MQ_A02_1_169.897_F2	A02_1	169.897	2016-12-19 13:05:49.103	13:05:50	2.0	Pkw	Pkw	0	7	1
159	MQ_A02_1_169.897_F1	A02_1	169.897	2016-12-19 13:05:51.330	13:05:52	1.0	Pkw	Pkw	0	7	9
160	MQ_A02_1_169.897_F2	A02_1	169.897	2016-12-19 13:05:54.023	13:05:54	2.0	Pkw	Pkw	0	7	1



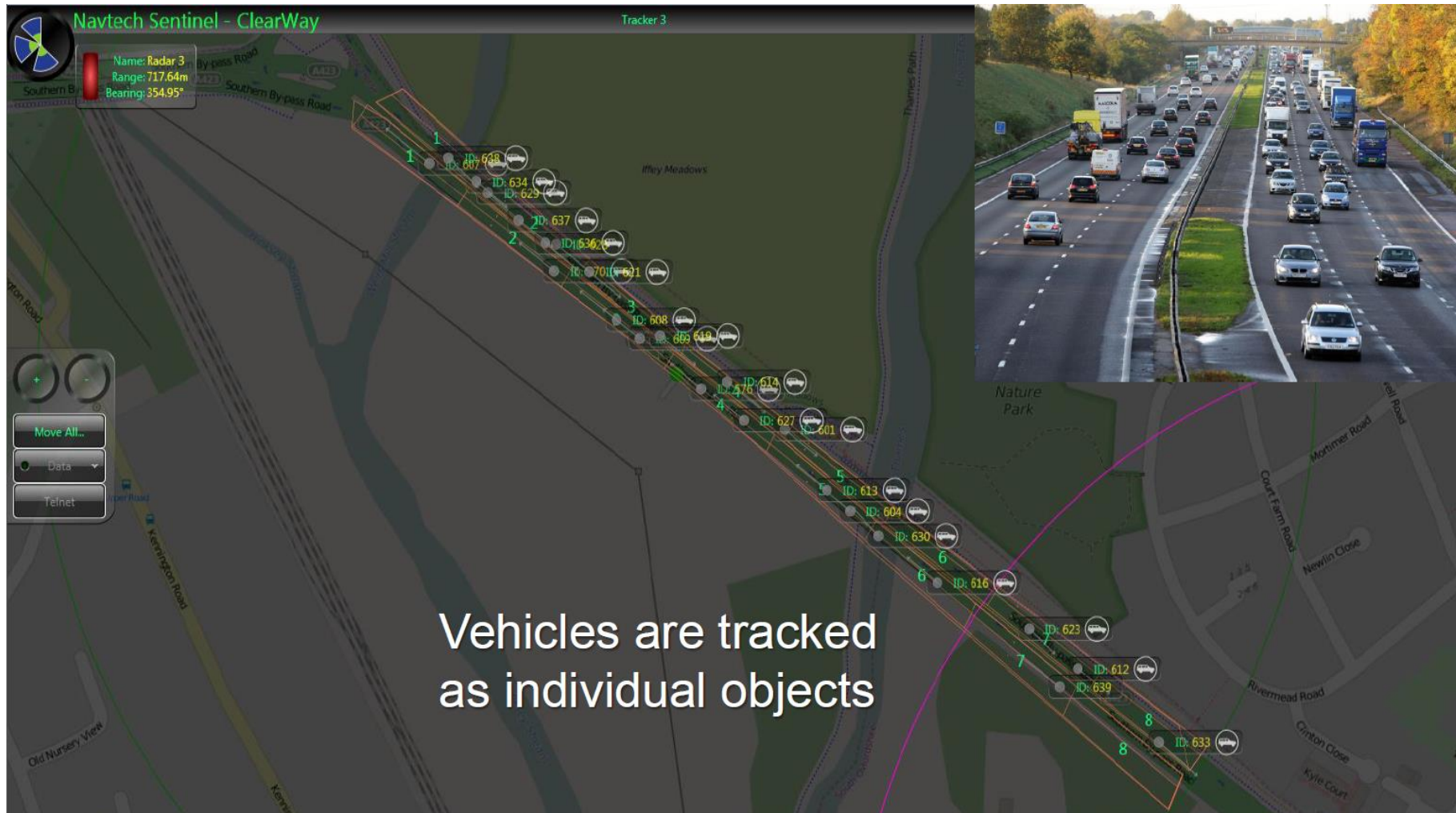
# Test track A2

## Radar Vehicle Detection



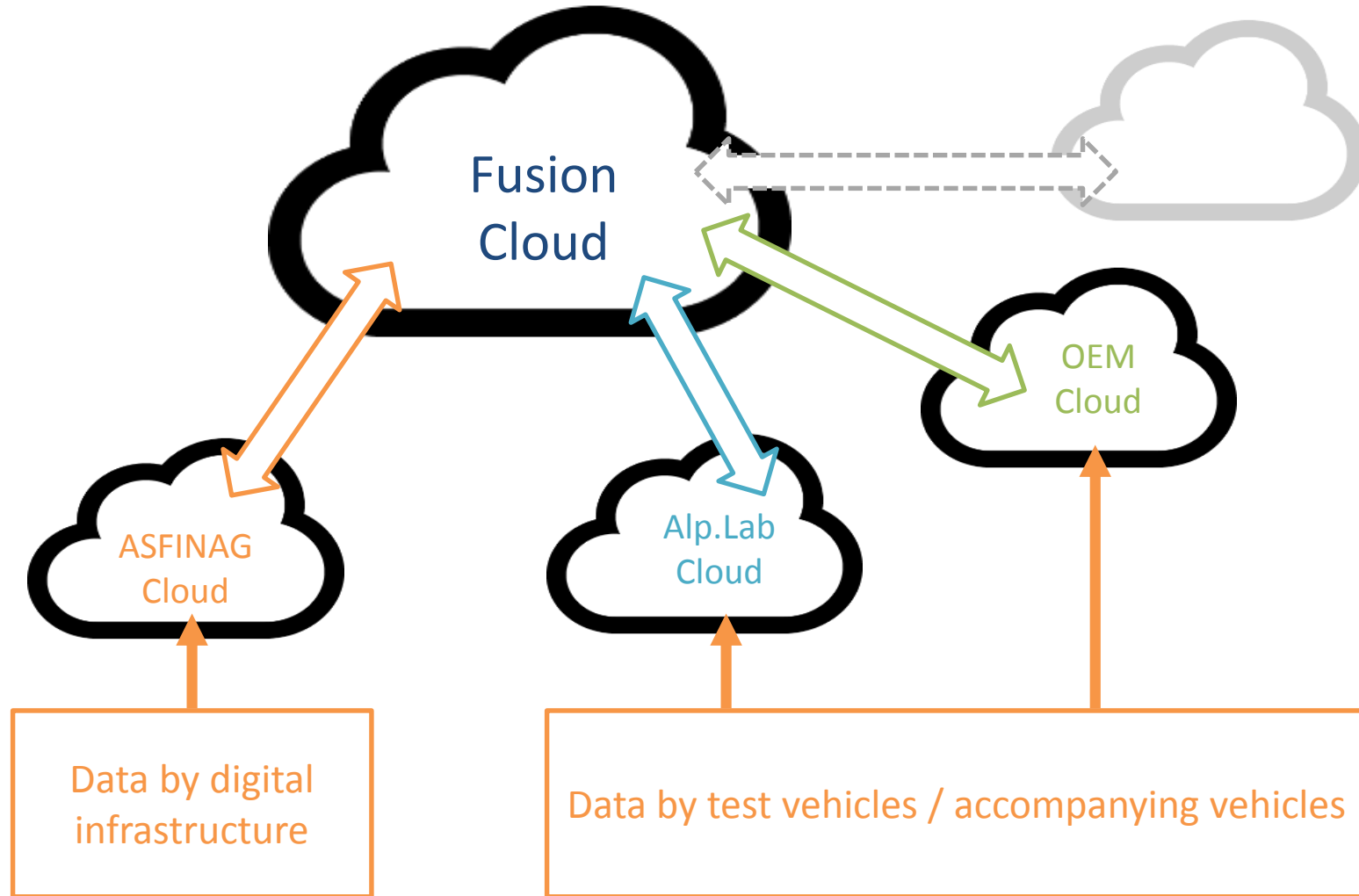
# Test track A2

## Radar Vehicle Detection Data



# Test track A2

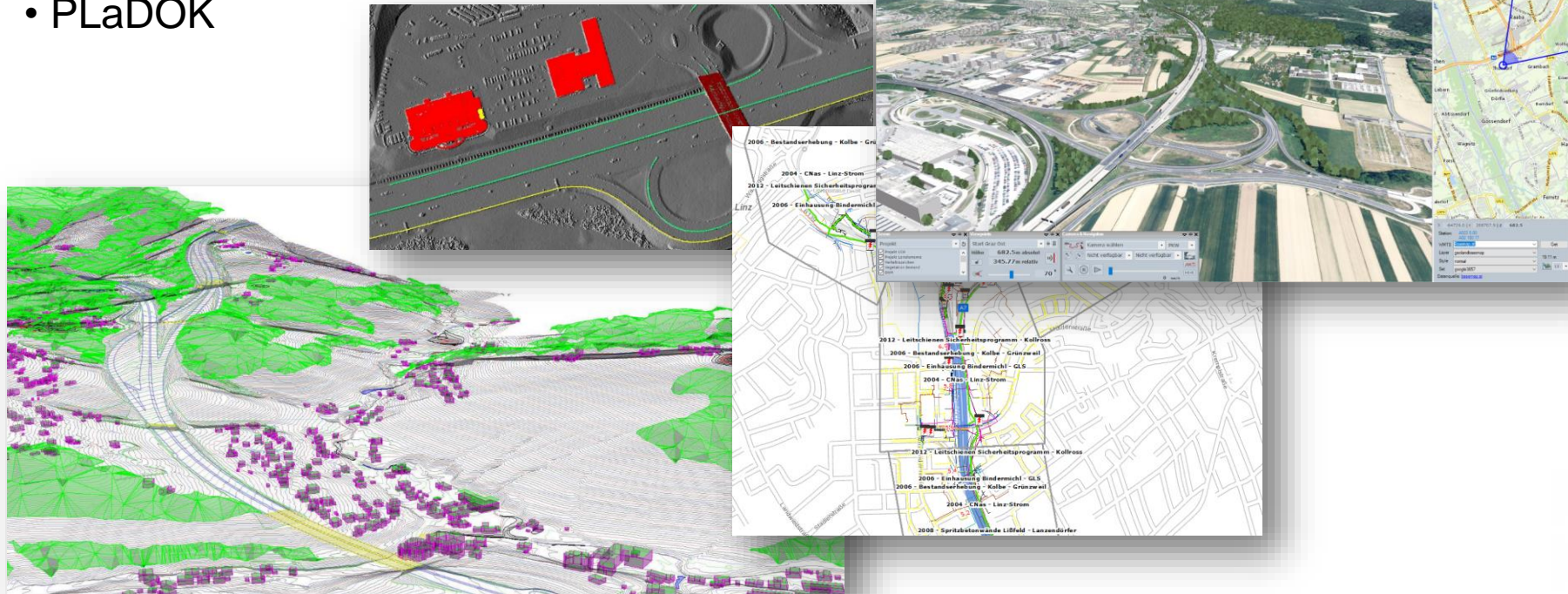
## Data Distribution and Processing in the Cloud



# Test track A2

HR Road Map, 3D Model

- UV-Data (Environmental Noise Regulation)
- Ortho-photos
- Videos of test track
- Traffic signs database
- PLaDOK



# Test track A2

## 3D Model

### Result:

- Virtual 3D model of the section; Modular structure (scenarios and variants possible)
- Any location / view angle selection
- Atmospheric effects (fog, light-shadow-throw)
- Visibility analysis & measurement of distances & heights

### Outlook:

- Presentation of actual traffic conditions
- Integration of video streams, exchange traffic signs, etc.
- Position, class and orientation of the vehicles
- Simulation of real traffic



# Demo of a Future Road Map





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