Data Collection and Management

Managing euroFOT data in the Swedish VMC

Jonas Bärgman Chalmers University of Technology

Final Event 26-27 June 2012 Autoworld, Brussels



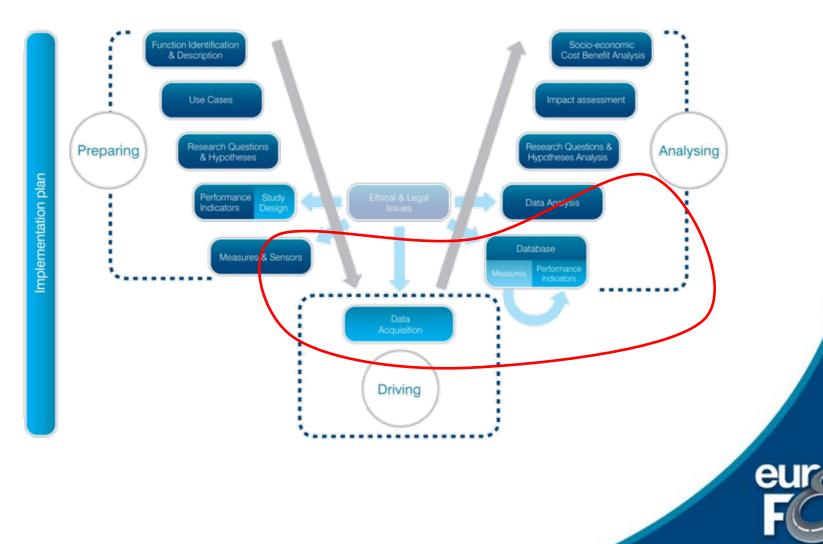


www.eurofot-ip.eu



Bringing intelligent vehicles to the road

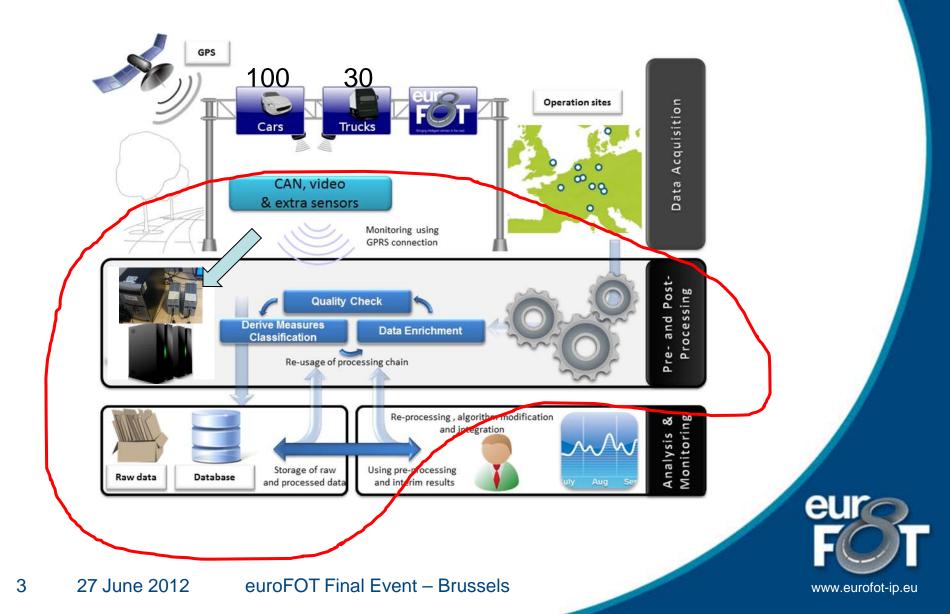
Data management - what is it?



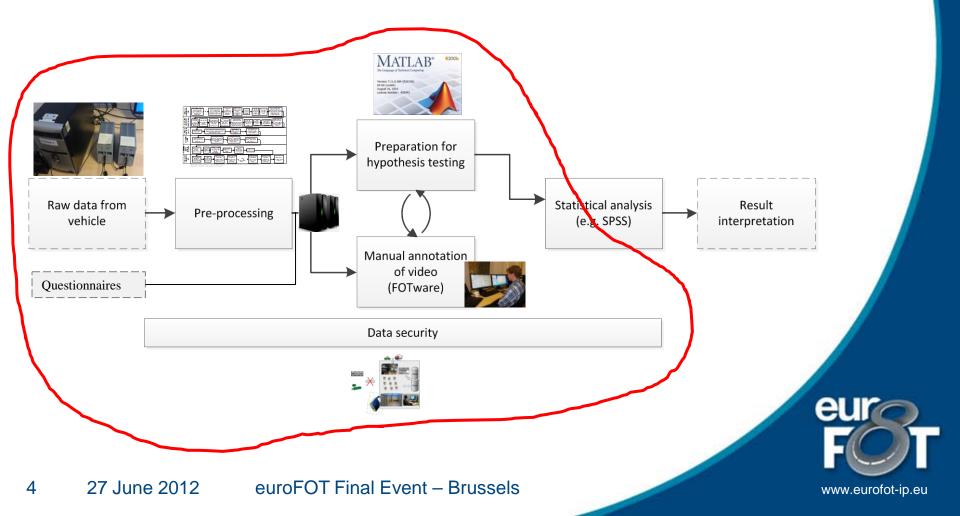
2 27 June 2012 euroFOT Final Event – Brussels

www.eurofot-ip.eu

EuroFOT Data Management Chain



Swedish VMC Data Management Chain



Data Acquisition System

 Of the shelf components
 In-house developed software (modified for euroFOT)

Cable harness Logger CAN access and baseline Cam Cam **Drivers Foot** Front Cam Eyetracker Cabin Cam GPS **Blind Spot** eur

www.eurofot-ip.eu

Pre-Processing

Pre-proce	essing in the Swedish VMC in euroFOT	
	This flowchart shows the Swedish VMC's data pre-processing steps from when data is available at OEM until it is delievered at SAFER/Chalmers for upload.	
 Read data and eye tracker processing 	Der Load vehicle Decrypt data, Market And Carl and Process eye trackers I. Read data, decrypt CAN and process eye trackers necessary. rormat source mequency	
req		
2. Naming, fix time and high freq derived measures	2. Naming, time synch and high freq derived measures	
3. Filter and resample per measure	3. Filter and resample per measure	
4. Calculate quality	4. Calculate quality	
easures and torage	Calculate ¹⁾ all Calculate Kalman Calculate ¹⁾ all Read ¹⁾ MAP Handle ¹⁾ Remove ¹⁾ some original	
Calculate derived measures and events. Save to storage	5. Calculate derived measures and events. Save to storage	our
5. Calcue	Add anter its other data (different frequency) alphabetically (simplify usage) transfer disk. server and transfer disk (with checksums) anter its Chalmers for uploading	Gui
1)	The OEM specific information about per-vehicle configuration is added in the MS Excel document called MEPS. This document is then parsed by Matlab and a Matlab structure (called oPreProcCfg)	

'The OEM specific information about per-vehicle configuration is added in the MS Excel document called MEPS. This document is then parsed by Matlab and a Matlab structure (called o containing all relevant configuration information (for each indivudual vehicle) is used in all steps of the pre-processing.

6

Storage and Databases

 File system storage of video
 OracleTM SQL server for metadata, events, annotations and time-history data





7 27 June 2012 euroFOT Final Event – Brussels

www.eurofot-ip.eu

Data Security and Access





FOTware – Data analysis tool

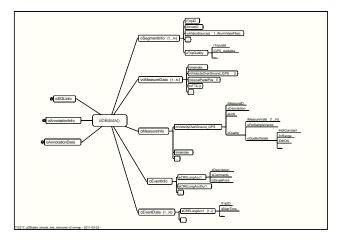




9 27 June 2012 euroFOT Final Event – Brussels

Hypothesis Testing Framework

- Hypothesis analysis templates for scripts and input/output formats





Conclusions

- Common euroFOT data management structure between sites
- Lessons learned from previous Swedish FOT/NDS projects very valuable
- Swedish implementation solid and proven throughout the chain



8 Functionalities, 28 Partners, 1000 Vehicles **1 Field Operational Test, 8 Functionalities** 28 Partners, 1000 Vehicles, 1 Field Operational Test 8 Functionalities, 28 Partners, 1000 Vehicles **1 Field Operational Test, 8 Functionalities** 28 Partners, 1000 Vehicles, 1 Field Operational Test 8 Functionalities, 28 Partners, 1000 Vehicles **1 Field Operational Test**



