AN NRA PERSPECTIVE ON AUTOMATED DRIVING

4th ZalaZONE Trilateral Conference
15.07.2022

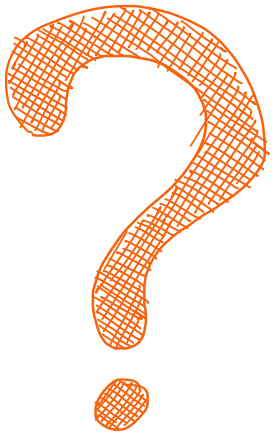
A|S|F|i|N|A|G
GUTE FAHRT, ÖSTERREICH!

AGENDA

- Cooperative Intelligent Transport Systems (C-ITS) in general
- C-ITS testing
- Infrastructure support for AD (IAD)
- IAD evaluation
- Development C-ITS
- Take-away

AGENDA

- Do we *really* need another system?



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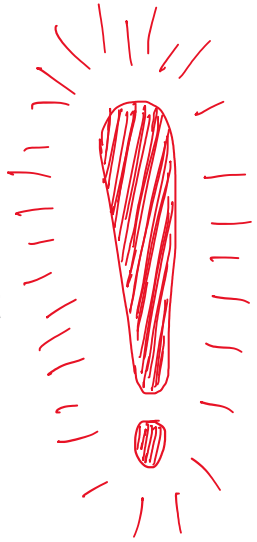
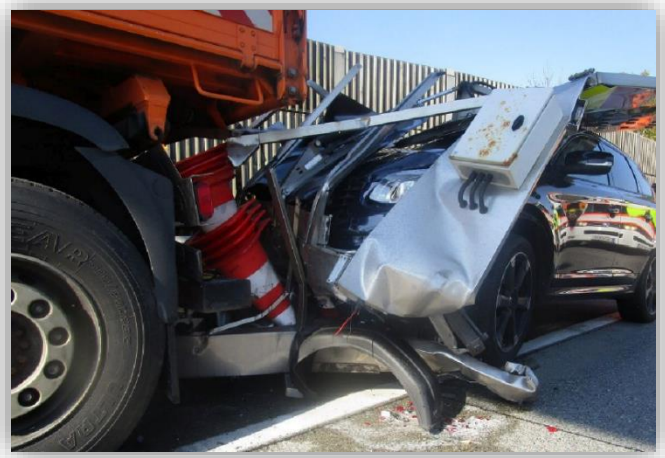
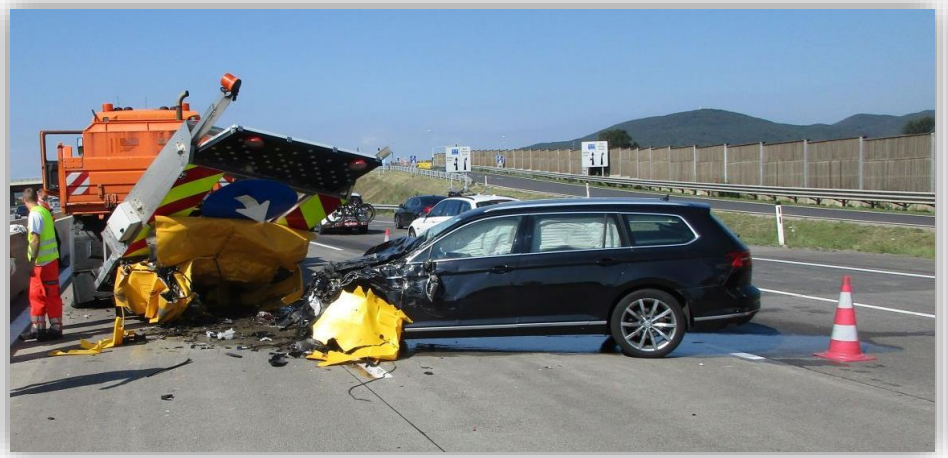
C-ITS

- Roughly 10% of our fleet is lost *every year* due to accidents.







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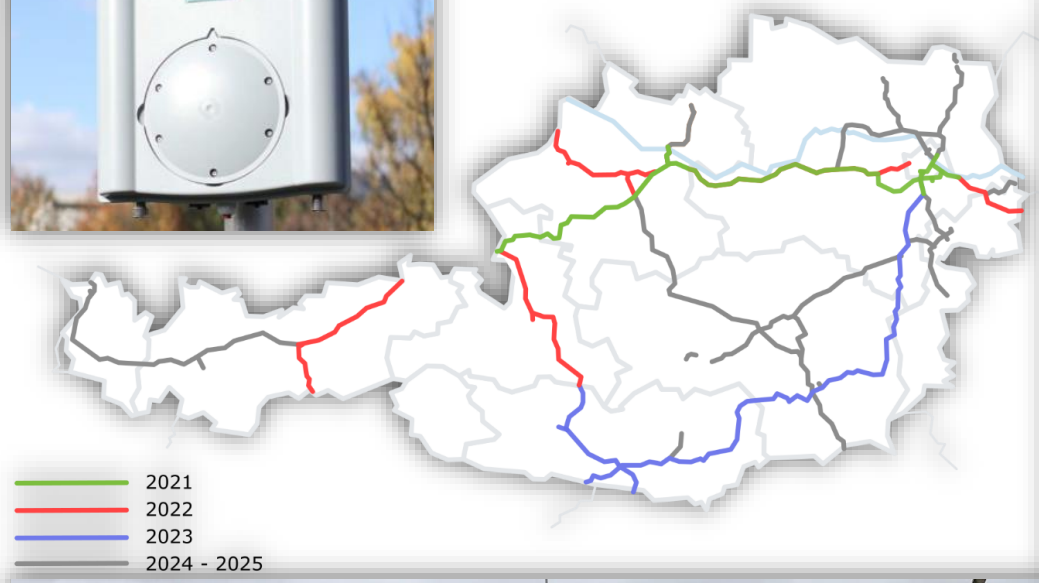
C-ITS



RSUs

- 525 units until 2025
- 2249 km network
- every 4 km in average

Mobile warning trailers

- video, radar, TTE, C-ITS
- operational in all regions of Austria

Road operator vehicles

- 100 units until 2025

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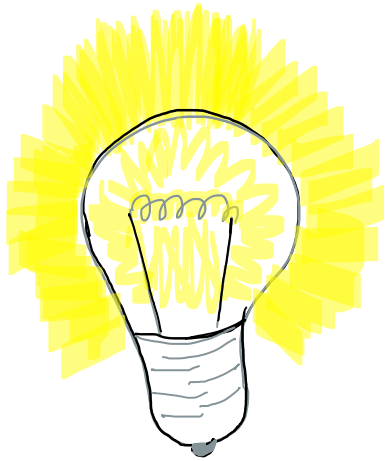
C-ITS

- C-ITS is already available as standard (VW Golf 8, ID.3, ID.4, Seat Cupra Born).
- No additional devices, apps or subscription needed.



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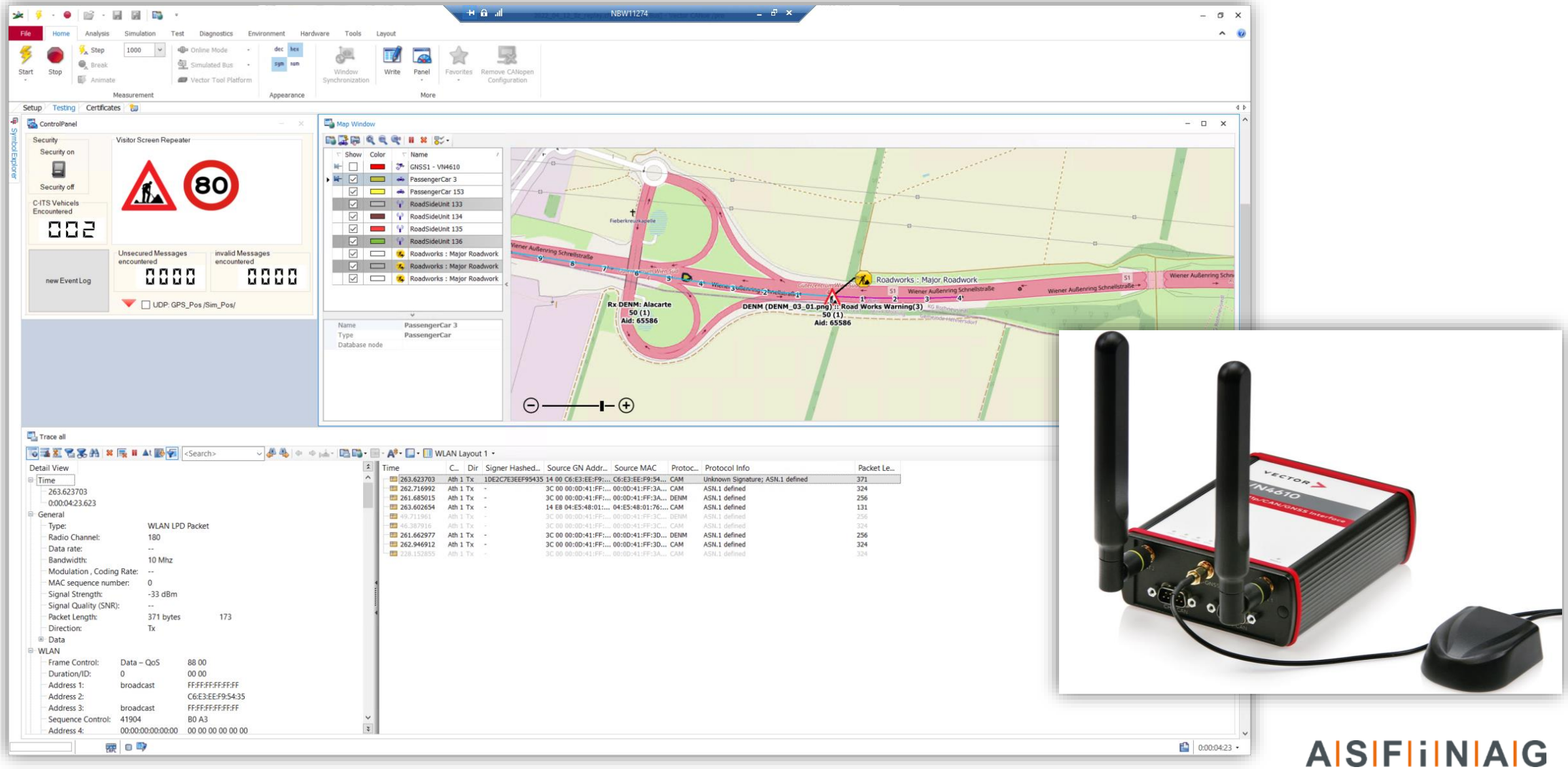
C-ITS TESTING



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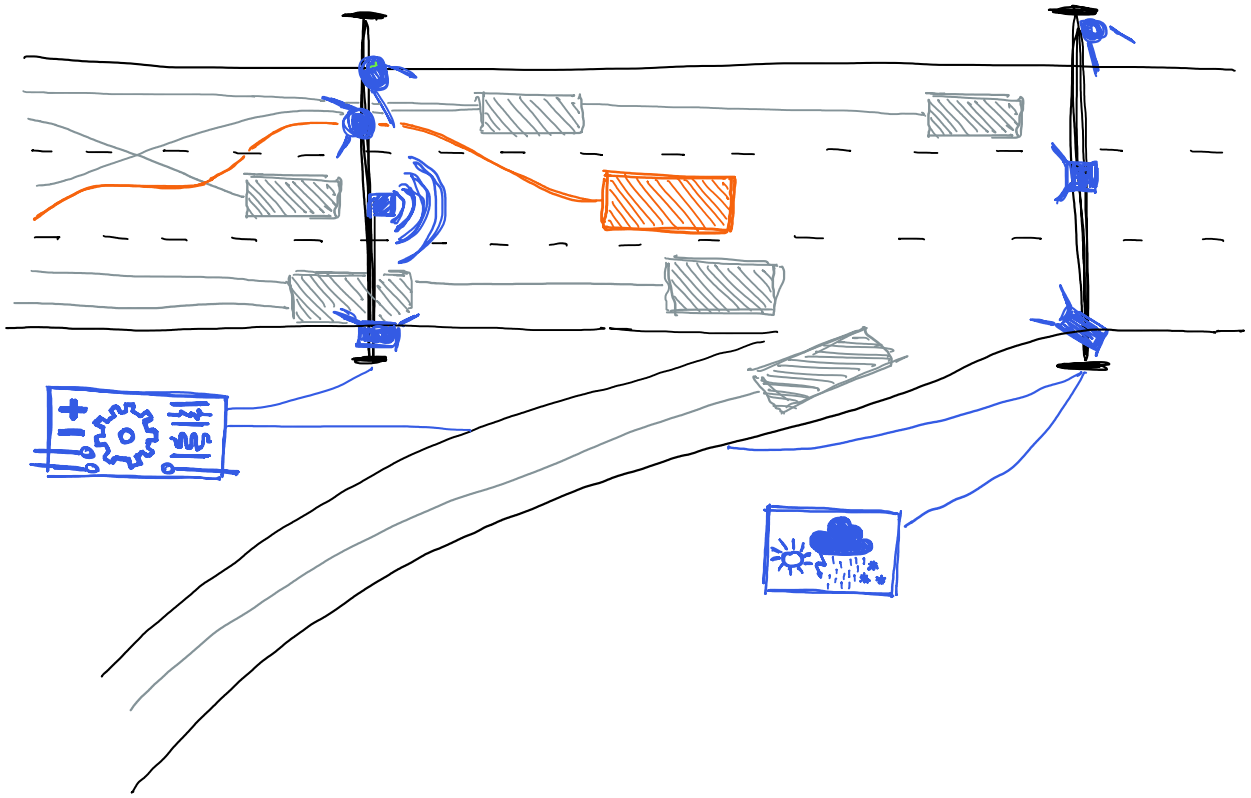
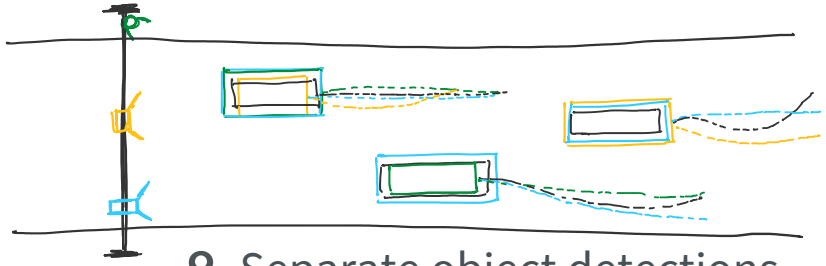
INFRASTRUCTURE SUPPORT FOR AD (IAD)



- Goal: Send ETSI Collective Perception Message (ETSI CPM) to a vehicle containing the data about its surrounding.
- Data can originate from different vehicles, sensors, sensor types and can be processed to a varying degree.



- Separate object detections

- Fused object detections

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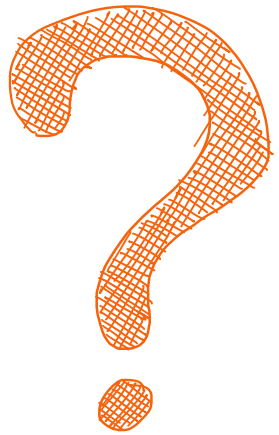
IAD

- How to measure performance of our systems?
- How to guarantee the correctness of the system?



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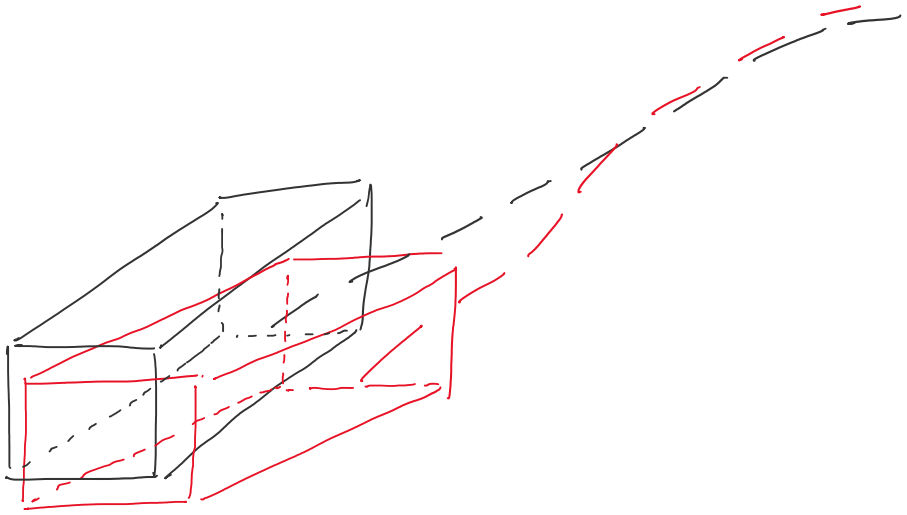
IAD EVALUATION

- Record highly accurate reference trajectories using RTK GNSS.

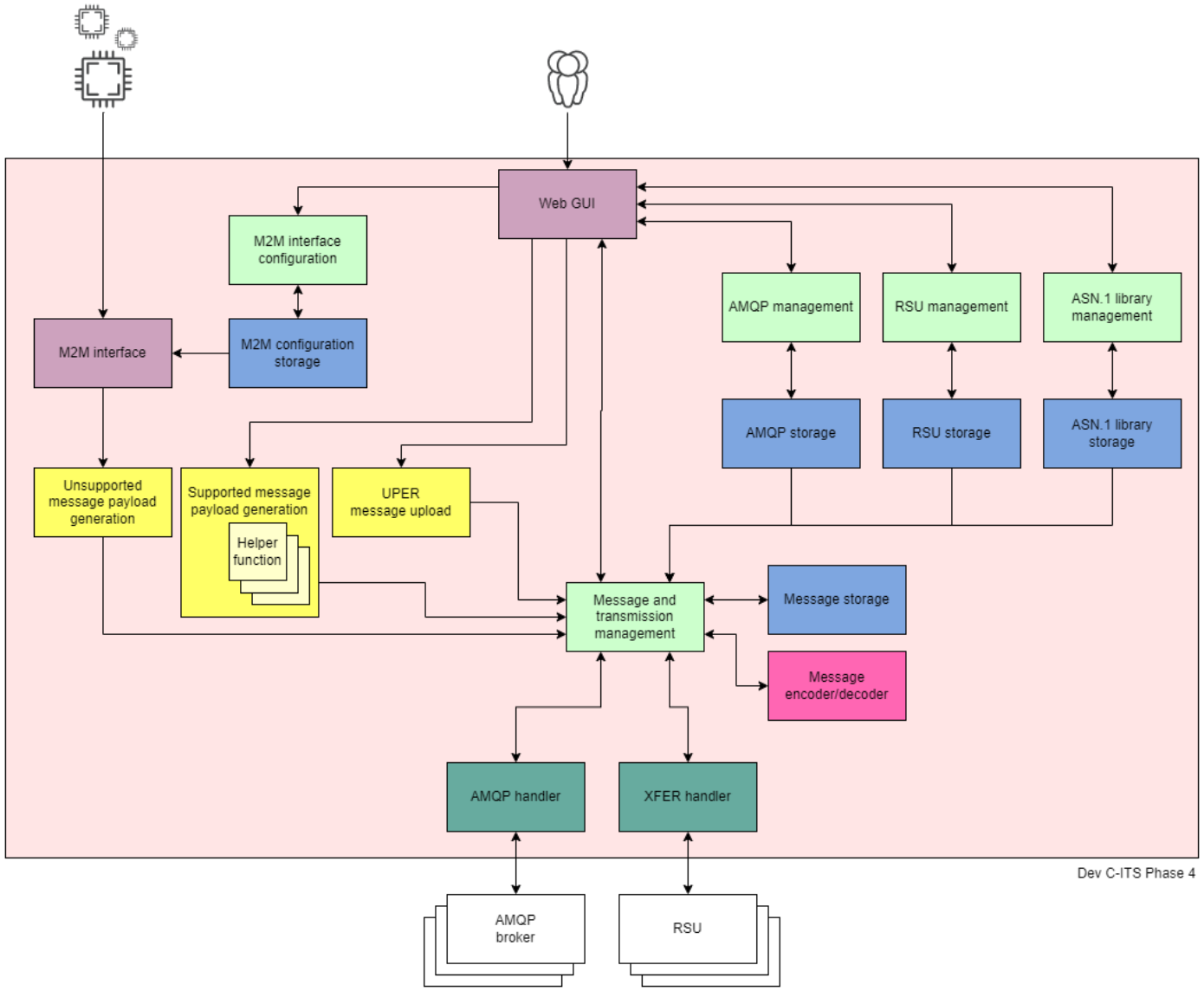


- Evaluate detected object trajectories agains reference trajectories:
  - detection accuracy
  - localization accuracy
  - association accuracy

- Higher order tracking accuracy (HOTA)

DEVELOPMENT C-ITS

- Non-standardized C-ITS messages not allowed in the productive environment.
- Such messages are needed for further C-ITS development or specific research projects.
  - HADRIAN
  - ESRIUM
  - INFRAROB
- New, modular C-ITS which allows us to define custome message types, easily integrate it with different devices over M2M interface and establich hybrid C-ITS communication over RSUs (short range) and AMQP broker (long range).



TAKE-AWAY

Make our highways safer and more efficient environment for all traffic participants!

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QUESTIONS?
WE ARE HERE FOR YOU!

asfinag.at

Srđan Letina

ITS Services

IT Expert CCAD & Digital Infrastructure

srdan.letina@asfinag.at

+43 664 60108 12461

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