DATA CENTRIC ARCHITECTURE.
DATA MIDDLEWARE AS PART OF AN ECOSYSTEM.

COVESA.
DATA CENTRIC ARCHITECTURE.
MOTIVATION & GOALS.

Architecture
- Common architecture for data transfer and handling
- Common data domain models to interchange data
- On- & Off-board share common data architecture
- Efficient data transfer

Everywhere & Anytime
- Increasing the availability of data
- Data is available, even if single ECU's are shutdown

Cost efficient
- Reduction of costs
- Shorter feedback loops, faster reaction to regulations
- Time-to-market for data-centric use cases

Simplicity
- Simplify interaction with vehicle on & off-board
- Data centric use cases on & off-board
DATA CENTRIC ARCHITECTURE.
TODAY’S ARCHITECTURE.

Head-Unit

- Browser (*App*)
  - Radio
  - VISS

Telecommunication Unit

- App-Layer
  - Onboard Service
  - Connection Layer

Backend / Cloud

- Application
- VSS Data Model
- Additional Data Model
- Backend Services
DATA CENTRIC ARCHITECTURE.
DATA MIDDLEWARE AS PART OF AN ECOSYSTEM ARCHITECTURE.
DATA CENTRIC ARCHITECTURE.
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- Global data model and verification based on VSS
- Centralized on-board connection handling
- Partial on-board data models, to reduced storage on each ECU
- Each ECU stores only the data required or created by the services
- The whole data is accessible, can be requested and subscribed, via the data middleware
- Easy introduction of additional data models
DATA CENTRIC ARCHITECTURE.
OUTLOOK ON THE DATA MIDDLEWARE.

- Rollout middleware to research fleet to confirm & harden the concept against the following criteria
  - Scalability
  - Connectivity
  - Availability
  - Ease of use
  - Running costs

- Usage of 3rd party end to end data middleware let an OEM focus on
  - increasing quality of personalized experience on different touchpoints by adding additional domain data models
  - relating this semantically rich data to each other and enabling new services