WELCOME!
TODAY:
A CENTRALIZED FUNCTIONAL APPROACH TO DEVELOP SELF DRIVING TRUCKS.
WHY DO WE NEED SELF DRIVING TRUCKS?
WHY DO WE NEED SELF DRIVING TRUCKS?

WHAT IS OUR CENTRALIZED FUNCTIONAL APPROACH?
WHAT IS OUR CENTRALIZED FUNCTIONAL APPROACH?

WHY DO WE NEED SELF DRIVING TRUCKS?

HOW ARE WE PLANNING OUR SELF DRIVING TRUCKS?
WHY

DO WE NEED SELF DRIVING TRUCKS?
Why do we need Self Driving Trucks?

TCO

OPTIMIZATION!
IN THE PAST ...

...optimizing the route costs.
IN THE FUTURE ... 

...optimizing the *driver* costs.
WHERE

DO WE NEED SELF DRIVING TRUCKS?
THE FIRST STEP.
Where do we need Self Driving Trucks?
Where do we need Self Driving Trucks?

PILOT FOR HIGHWAYS
Where do we need Self Driving Trucks?

PLATOONING
CLOSED AREAS
Where do we need Self Driving Trucks?

TERMINAL CONTROL
IS OUR CENTRALIZED FUNCTIONAL APPROACH?
THE FUNCTIONAL APPROACH.
What is our centralized functional approach?

THE FUNCTIONAL APPROACH

EMERGENCY BRAKE ASSIST

GET RADAR DATA

OBJECT DETECTION

DECELERATION REQUEST

BRAKING

What is our centralized functional approach?
THE FUNCTIONAL APPROACH

EMERGENCY BRAKE ASSIST

Function Level:
- GET RADAR DATA
- OBJECT DETECTION
- DECELERATION REQUEST
- BRAKING
- CENTRAL VEHICLE MANAGER
- DISTANCE CONTROL
- TORQUE REQUEST
- ENGINE

Component Level:
- RADAR
- BRAKE

What is our centralized functional approach?
What is our centralized functional approach?

THE FUNCTIONAL APPROACH

EMERGENCY BRAKE ASSIST

ADAPTIVE CRUISE CONTROL

Function Level

- GET RADAR DATA
- OBJECT DETECTION
- DECELERATION REQUEST
- BRAKING
- DISTANCE CONTROL
- TORQUE REQUEST

Component Level

- RADAR
- CENTRAL VEHICLE MANAGER
- BRAKE
- ENGINE
THE CENTRALIZED FUNCTIONAL APPROACH.
THE CENTRALIZED FUNCTIONAL APPROACH

ALL INFORMATION IN ONE PLACE!
What is our centralized functional approach?

THE **CENTRALIZED FUNCTIONAL APPROACH**

**Sensor / Input**
- RADAR SENSOR
- RADAR SENSOR SIDE
- CAMERA
- HMI-INPUT
- INERTIAL SENSORS

**Vehicle Control**
- CVM
  - CENTRAL VEHICLE MANAGER

**Actuators / Outputs**
- ENGINE
- BRAKE
- STEERING
- IO MODULES
- CLUSTER

MAN Truck & Bus | MAN ee | Ralf Weller | 11. Oktober 2017 | Self-Driving Trucks
Our Focus:
SOFTWARE DEVELOPMENT

What is our centralized functional approach?

THE CENTRALIZED FUNCTIONAL APPROACH
THE CENTRALIZED FUNCTIONAL APPROACH

- ALL INFORMATION IN ONE PLACE!
- IDEAL STARTING POINT FOR AUTONOMOUS DRIVING!
How are we planning our self driving trucks?
How are we planning our self-driving trucks?

PILOT FOR HIGHWAYS

SENSOR SETUP
PILOT FOR HIGHWAYS

SENSOR SETUP

ARCHITECTURE
How are we planning our self driving trucks?

PILOT FOR HIGHWAYS

SENSOR SETUP
ARCHITECTURE
REDUNDANCY
DEVELOPMENT OF SELF DRIVING TRUCKS.
DEVELOPMENT OF SELF DRIVING TRUCKS

WITH HIGH RELIABILITY AND SAFETY
DEVELOPMENT OF SELF DRIVING TRUCKS

- WITH HIGH RELIABILITY AND SAFETY
- WITH FOCUS ON SOFTWARE DEVELOPMENT