Autoware AW1

Vehicle Definition

Vehicle Definition & Features
Autonomous Delivery Vehicle
Exclusively driving on private campus
Symmetric Vehicle
4-wheel steering
Crab steering
HVAC
Agile battery swap
1 side cargo door with automatic opening

Vehicle Definition & Features
Variable height to facilitate unloading
Light sensor, temperature sensor, door sensor
Front lights, rear lights, turn singles, licence plate lights
1 LiDAR, 3 cameras, 1 short-range radar, 1 GPS/IMU unit
Headlight and taillights with turn signals
Horn
Interior light
AVAS system
5G/BLE/WiFi
Exterior screen

Dimensions (mm)	
Length	3500
Width	1900
Height	2350-2660
Internal clearance	2100
Ground clearance	40-200
Variable height	160
Wheelbase	2800

Specs	
Tires	15”
High Voltage	96 V
Battery	23 kWh
Max speed	20 km/h
In-wheel motors (4)	22 kW
Wheel torque	840 Nm
Payload	1000 kg

Timeline (to be adjusted after details have been refined):

- First prototype in 8 months
- Next 4 pre-series units in 4 to 5 months
- Next 5 units in 4 months

Electronics & Electrical Architecture

Steering, Braking, BMS, DCDC, OBC, access, lighting

Motor control

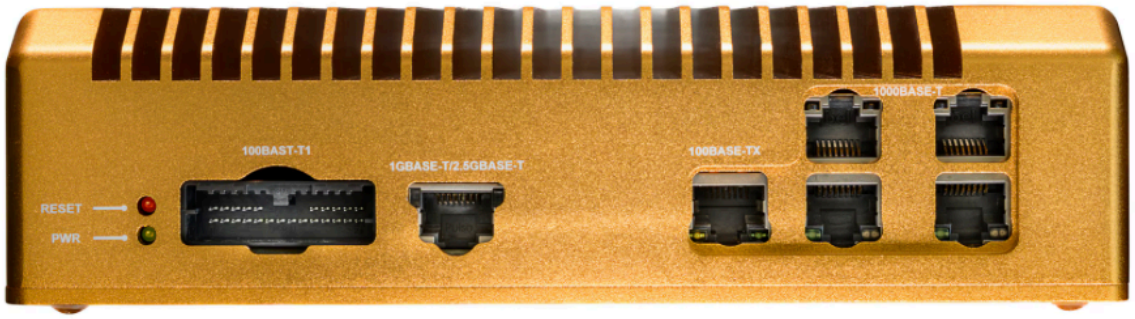
Infotainment - i.MX8M based

NXP S32G3 Gateway/Controls

Autonomy - AGX Orin based

Gateway/controls

https://www.nxp.com/design/design-center/development-boards-and-designs/goldbox-3-vehicle-networking-development-platform:GOLDBOX-3



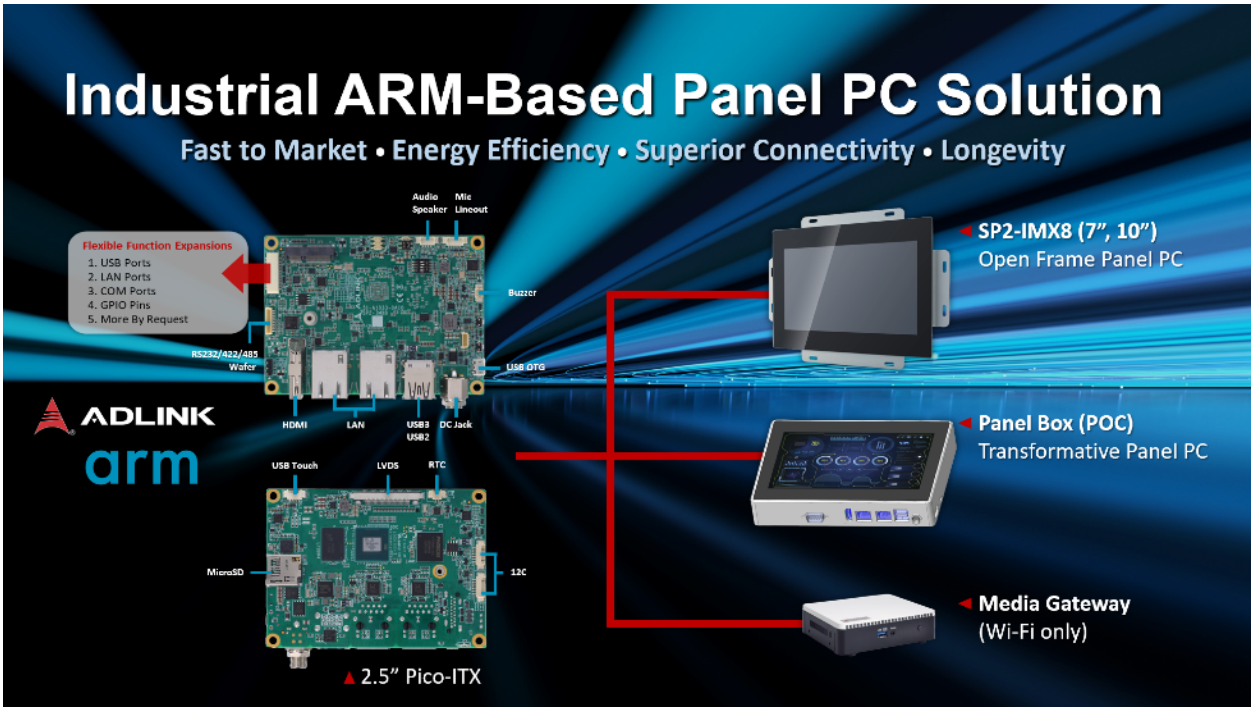
(Not sure if this is industrial enough)
NXP S32G3 based gateway/controls unit
This unit would control

Autonomy

Advantech MIC-733-AO
Nvidia AGX Orin based industrial computer

https://www.advantech.com/en-us/products/edge-ai-jetson-system/sub_9140b94e-bcfa-4aa4-8df2-1145026ad613

Infotainment



https://www.adlinktech.com/Products/Panel_PCs_Monitors/Panel_PCs_Monitors/SP2-IMX8_Series

Control Modules

Other control modules would mostly come from the existing platform, including BMS, motor control, steering control, braking control, DCDC, OBC.
Specific sensors/actuators for the vehicle can be controlled by the gateway module.

Drive-By-Wire

TBD (depends on the platform solution)

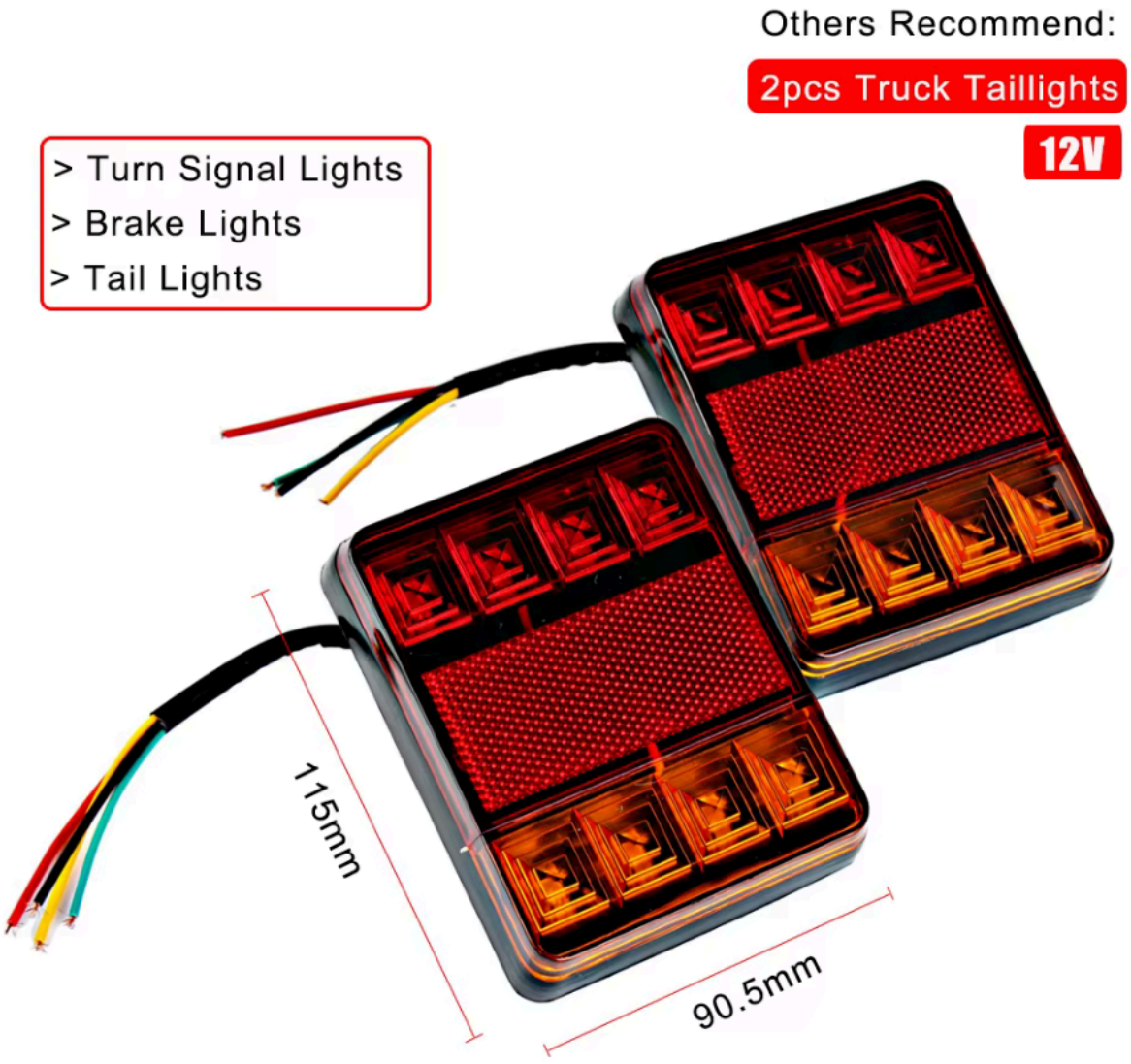
Sensor Suite

Examples

- LiDAR: Velodyne VLP-16 or Ouster OS0 series
- Cameras: TBD
- Radar: Continental ARS
- IMU/GPs: TBD

Options for sensors/actuators

Exterior lighting



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To simplify, existing offroad lighting can be used.

Interior lighting

https://www.ledvance.com/professional/products/luminaires/professional-luminaires/downlights/flat-downlight-luminaires/flat-downlights-with-integrated-driver--square-shape-c8467?productId=44900