Deploying Autoware on real-world vehicles

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IV2019 - Autoware Workshop
Deploying Autoware on real-world vehicles

- StreetDrone overview
- Engagement with Autoware
- SD-VehicleInterface
- SD-TwizyModel
Make it faster, easier and safer for organisations to develop and deploy autonomous vehicle technology.
What we do

Autonomous-ready & Application-connected vehicle platforms:

• Drive-By-Wire (DBW)
• Functional safety
• Integrated Sensors
• Open source software development
StreetDrone
Technology Overview

Autonomous Platform

VEHICLES
SOFTWARE
DATA
APPS
We are helping our customers deploy Autoware and other software on the SD Twizy

Research and development vehicle, with 14 units deployed to proving grounds, universities, start-ups, funded InnovateUK projects and others.

Sample deployments include:

- Autonomous Valet Parking - Parkopedia
- Research Facility - HKPC

Open Architecture Vehicles at proving grounds:

- Millbrook Proving Ground
- SMLL
Engagement with Autoware

- Founding members of Autoware Foundation
- Open Source projects compatible with Autoware
- 1st Autoware Hackathon @StreetDrone - January 2019
Open-Source Software Implementations

- Collaboration - collective benefits
- Openness - access to data
- Efficiency - focus on your area of interest
SD-VehicleInterface

Communication between AW and SD Twizy CANBus:

- SocketCAN lib
- /twist_cmd: conversion into low level vehicle control commands
- Tuned PID Controller
- SW to DBW Handshake verification @200 Hz
- Vehicle’s status monitoring
SD-VehicleInterface

https://github.com/streethome/SD-VehicleInterface
SD-TwizyModel

Gazebo simulation model for the SD Twizy vehicle:

- Testing and validation of AV Software stacks
- Sensors’ output visualization with rViz
- 8 x Sekonix RGB Cameras and 1 x Velodyne VLP-16

https://github.com/streeterdrone-home/SD-Twizy-Model
Thank you!

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