[RFC] VDA (Vehicle Data Agent)

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What is current problems

On differences from actual products related to Vehicle data (include kaizen)

- Apps side
  - Apps is depend vehicle HW IF
  - Apps is depend CAN data format
  - Apps is depend destination requirement

  ->Shall be all vehicle data change to AGL public data provide to Apps

- MW side
  - MW need to very high cycle vehicle data received
  - MW need to support OEM private confidential data
  - MW need to protect OEM private confidential data
  - MW need to support many vehicle HW IF
  - MW need to vehicle data cache
  - MW need to easy removable vehicle HW IF

- Data Center side
  - Data Center need to real time vehicle data.
  - Data Center need to sync vehicle data when vehicle change offline to online.

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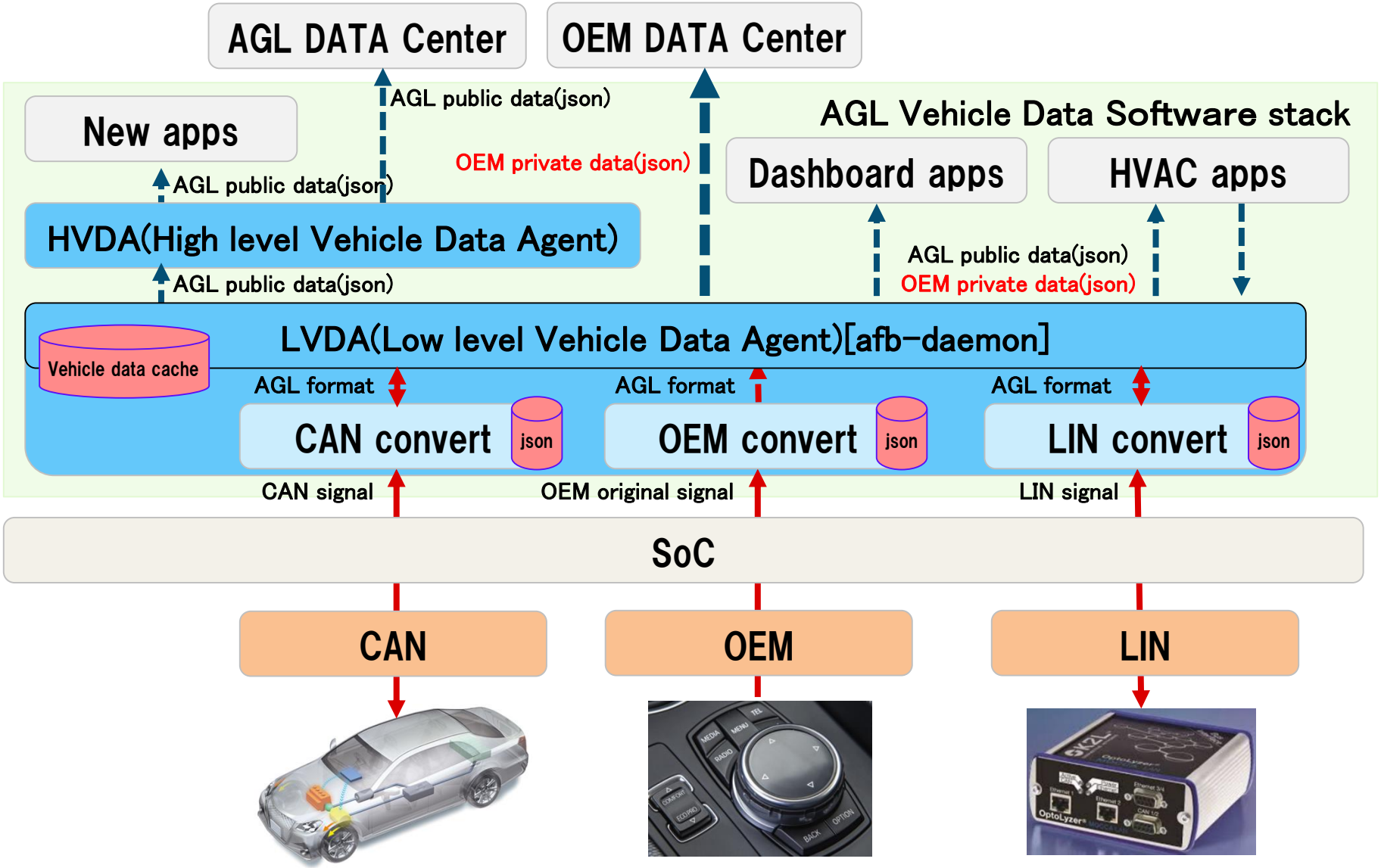
Proposal VDA(Vehicle Data Agent)

All vehicle data change to AGL public data and OEM private data provide to Apps



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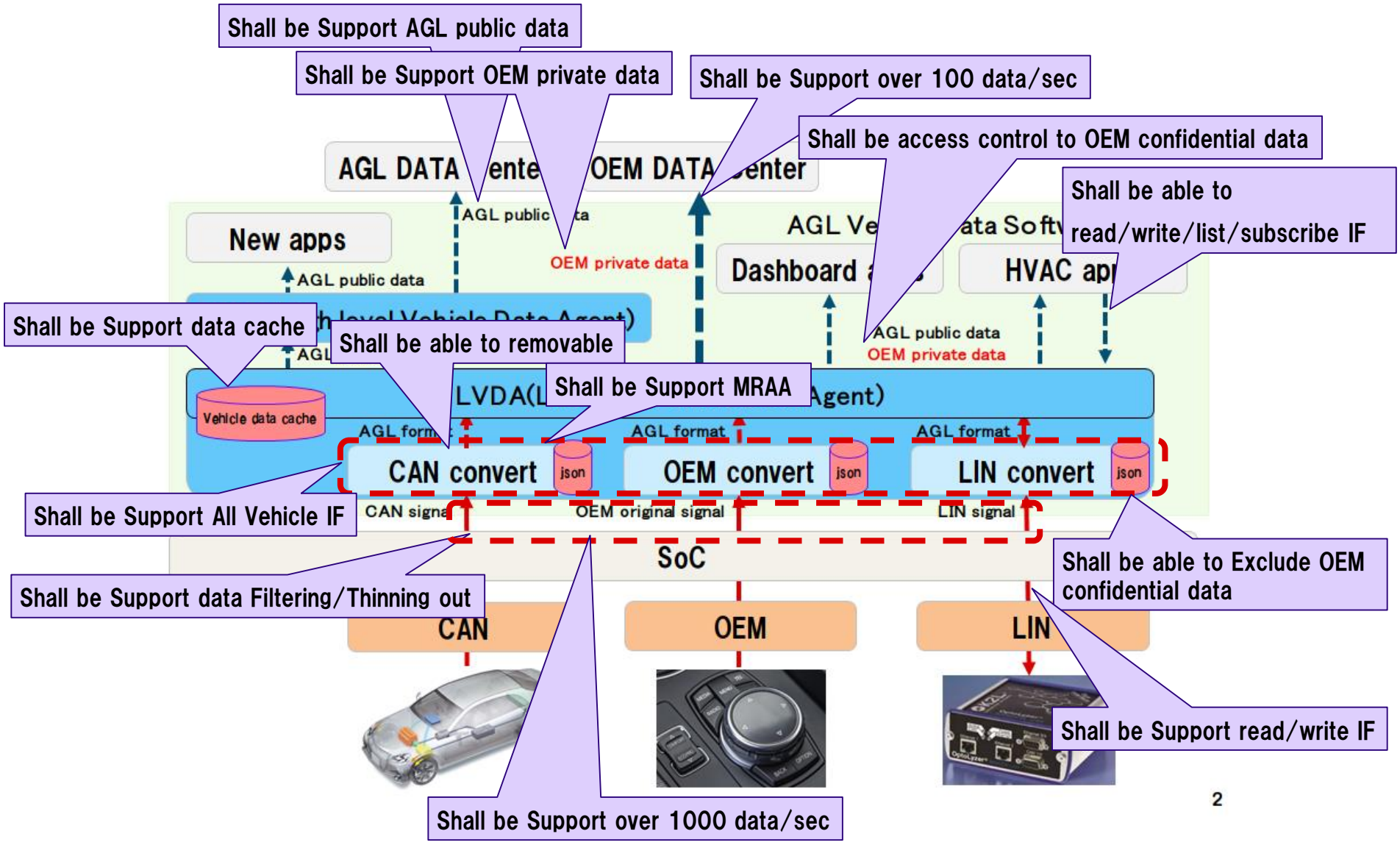
Requirement



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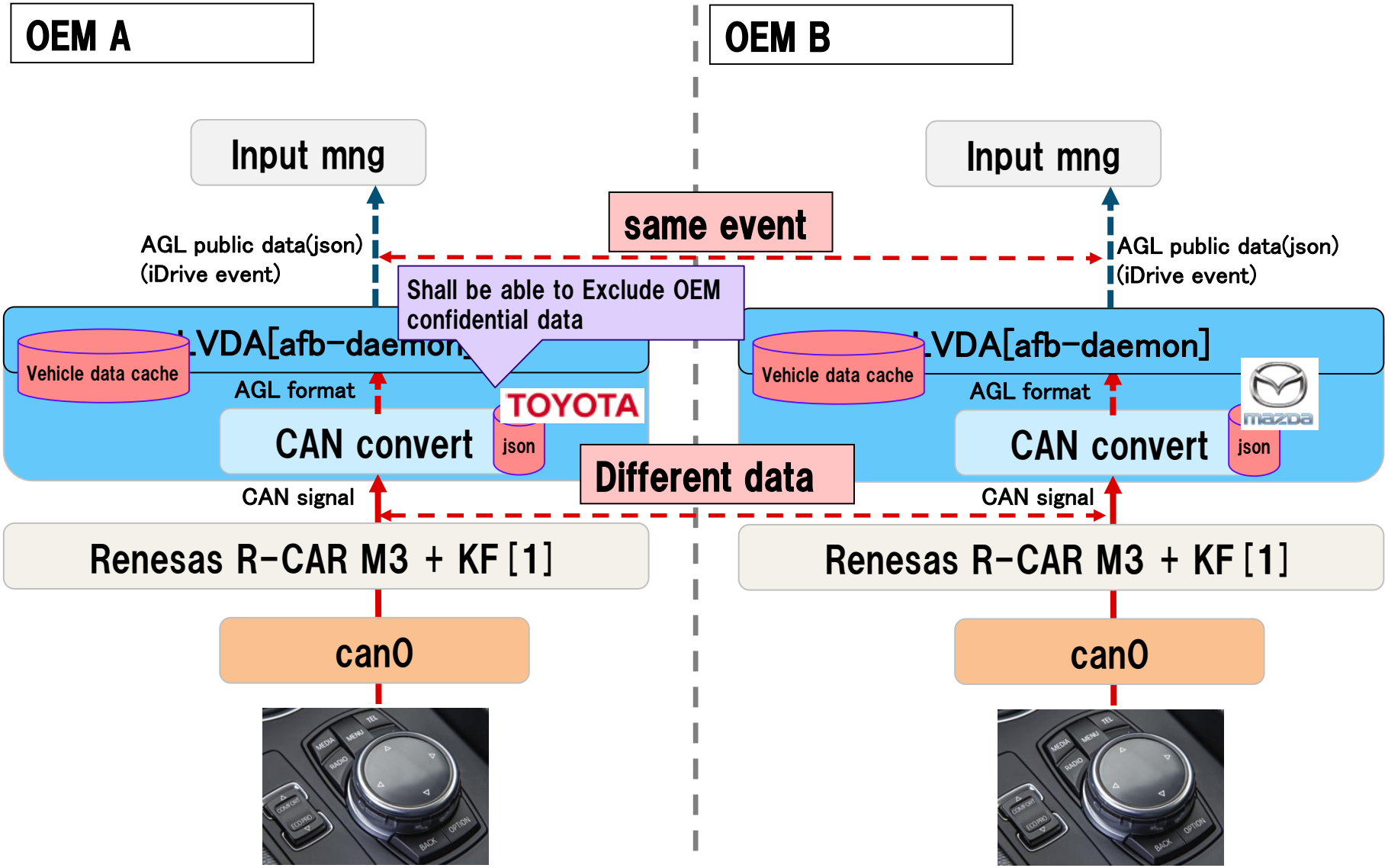
Example Use Cases 1-1

VDA provide to same event to Apps from different CAN data.



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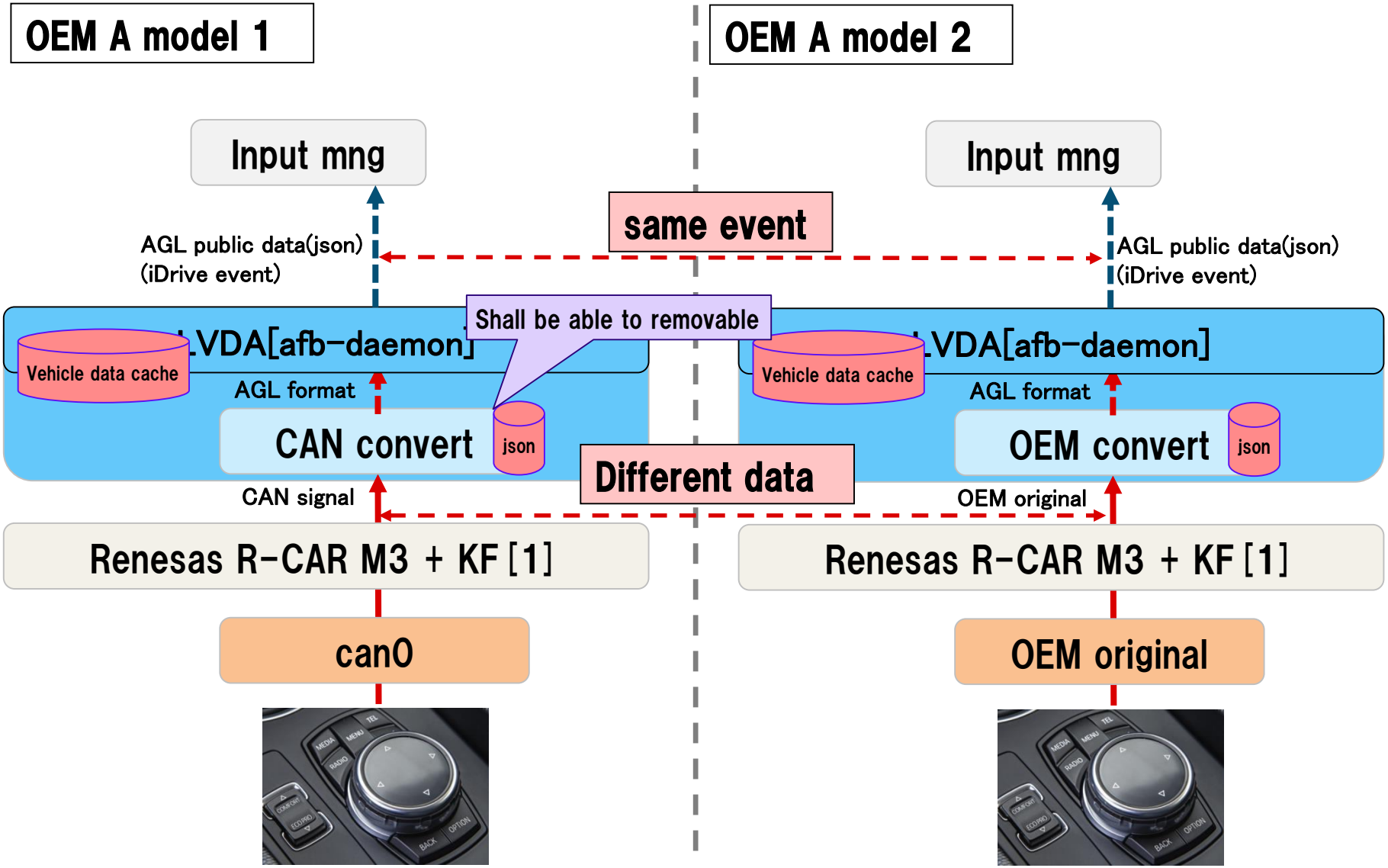
Example Use Cases 1-2

VDA provide to same event to Apps from different hardware IF.



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Example Use Cases 2

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Apps not depend destination requirement (For example Driver Distraction)

Destination A

VehicleData	DriverDistraction
10km/h <= Speed	ON
Speed < 10km/h	OFF

Apps

AGL public data(DriverDistraction)

HVDA(High level Vehicle Data Agent)

AGL public data(VehicleSpeed & ParkingBrake)

LVDA[afb-daemon]

Vehicle data cache

AGL format

CAN convert

json

CAN signal

Renesas R-CAR M3 + KF [1]

can0

Change destination logic

Destination B

VehicleData	VehicleData	DriverDistraction
10km/h <= Speed	ParkingBrake=OFF	ON
Speed < 10km/h	ParkingBrake=ON	OFF

Apps

AGL public data(DriverDistraction)

HVDA(High level Vehicle Data Agent)

AGL public data(VehicleSpeed & ParkingBrake)

LVDA[afb-daemon]

Vehicle data cache

AGL format

CAN convert

json

CAN signal

Renesas R-CAR M3 + KF [1]

can0

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[RFC]2018CES demo plan

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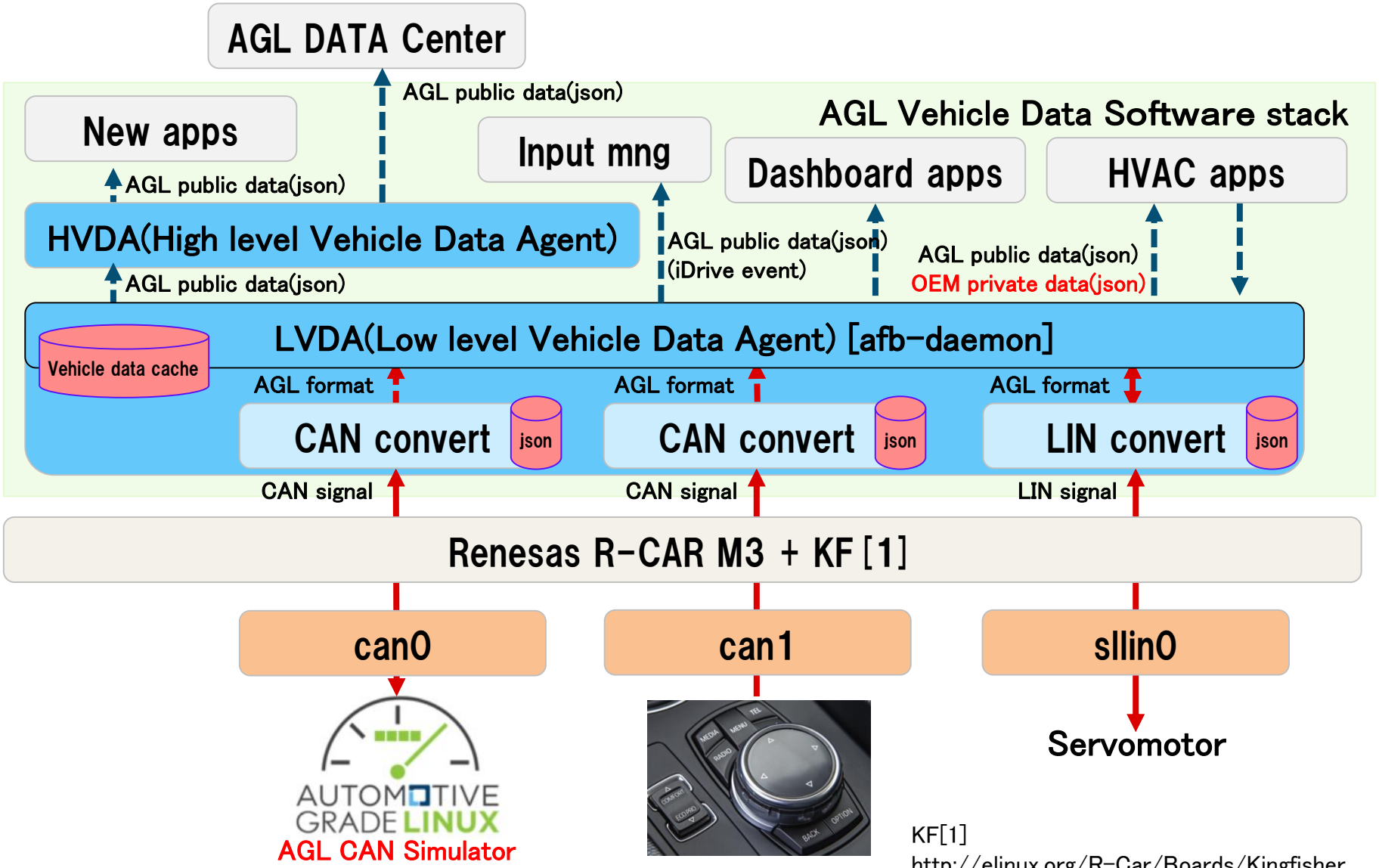

KF[1]
http://elinux.org/R-Car/Boards/Kingfisher

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Define AGL Public Vehicle Data

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Collaborate with the Reference Hardware System Architecture Expert Group

Sample

AGL Public Vehicle Data

Reference to

https://rawgit.com/w3c/automotive-bg/master/snapshots/data_spec_snapshot_latest.html

				AGL Reference Data			
No	Data label(Apps side)	value	AGL Reference IF	ID	Length	Data	cycle(ms)
1	VehicleSpeed	unsigned short	CAN	0x010	2	**,**	16
2	GearPosition	unsigned char	CAN	0x100	1	**	64
3	LightStatus	unsigned short	CAN	0x200	2	**,**	100
4	Seatbelt;	unsigned short	CAN	0x300	2	**,**	200
5	FuelInterface	unsigned short	CAN	0x400	2	**,**	1,000
6	EngineSpeed	unsigned long	CAN	0x011	4	**,**	16

Reference to w3c, OpenXC and FMS Vehicle data

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