The Problem

• Vehicle state is being off boarded to Internet services
• There is no standard / process that fits the bill
• No public forum where changes can be processed in a lightweight manner
• One format does not suit all
• Decouple IVI from electric architecture
VSS - Introduction

- Standardizing signal specification
- YAML subset
- Minimum attributes
- Lightweight change process
- Single source – multiple targets
- Feed other standardization organizations (W3C, etc)
- Technically simple
VSS Signal structure

- Engine
  - RPM
  - Speed
- Body
  - Mirrors
  - Doors
    - Left
    - Right
    - ...
  - Dimmed
  - Heated
  - ...

Signal Branch
Naming Convention

- body.mirrors.left.heated
- body.mirrors.right.heated
- body.door.front.left.open
- body.door.back.left.open

- Dot notated name path
- Last component is signal
- transmission:
  type: branch
  description: Transmission-specific data, stopping at the drive shafts.

• YAML list
• Only type and description mandatory
Specification source format: Signals

- speed:
  type: Uint16
  unit: km/h
  min: 0
  max: 350
  description: Vehicle speed

- Uses Franca typing
- Optional interval
- Optional SI unit type
- Can be enumerated

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Signal source format

- Multiple files aggregated together to a uniform specification
- YAML-compliant include directives used to aggregate spec fragments
- Facilitates git(hub) working model
- Minimizes commit conflicts

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Spec file re-use

- YAML-compliant include directives used to aggregate specification fragments
- An update to a fragment is propagated to all locations where it is used
- Facilitates git(hub) working model

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A proprietary signal specification can use the GENIVI VSS as a starting point
Can be used in production project to integrate with vendors
Mature private extensions can be submitted for VSS inclusion

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Generating target specifications

- Parser loads and interprets specification files
- Generators produces target documents and specifications
- Targets can be used as input to production projects and other organizations
- Additional generators can be added as needed.
• Pull requests submitted by anyone
• Mail discussion on genivi-projects list to approve request into develop branch
• Develop branch merged into master prior to tagged release
• Major number changes when existing tree structure is changed

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github.com/PDXostc/vehicle_signal_specification

Demo time

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