

4.6 Vehicle Parameter Configuration

Abstraction

IVI system requires software that is designed to meet a variety of needs and requirements. These needs and requirements vary depending on the country where it is used. In addition, OEMs want to provide multiple models and grades of vehicle, but their requirements also vary. In order to prevent huge numbers of IVI system software branching, a configuration mechanism is needed to cover several options without changing the program. This will be accomplished with this Vehicle Parameter Configuration. The information obtained from this function will allow, for example, the IVI system to set the required language for different countries and to select the Audio AMP that the product supports. In addition, based on the vehicle parameter, it determines if the vehicle is compatible with OEM-specific or country-specific features and returns it to the service.

This chapter describes the use cases with Vehicle Parameter Configuration, the functional requirements for realizing the use cases, and the functions of the Basesystem that can be used as a sample implementation.

Use cases

In the following table, use cases which need the Vehicle Parameter Configuration module for services are described.

Table 1

#	Item	Description
UC.VP.1	Vehicle parameter setting before shipment	Before the product is shipped from the factory, each OEM/Supplier writes the configuration values into the product depending on the needs and requirements of the product without changing the software.
UC.VP.2	Function check	When the driver presses the button for ACC-ON and the IVI system is started, the system obtains information on which functions the product supports from the vehicle parameter that has been set. For example, functions specific to communication standards, devices, applications, etc. are enabled/disabled based on the vehicle parameter.

Functional Requirements

This table includes the functional requirements of Vehicle Parameter Configuration module.

Table 2

#	Item	Related Use Case	Description
RQ.VP.1	Vehicle parameter setting	UC.VP.1	This function shall provide at least the following information as vehicle parameters <ul style="list-style-type: none">Country / RegionVehicle type/brandVehicle signal acquisition method (e.g.CAN or direct)
RQ.VP.2	Acquisition of vehicle parameter	UC.VP.1	If a request is received from a service that requires a vehicle parameter, Vehicle Parameter Configuration module shall provide the necessary information.
RQ.VP.3	Function check	UC.VP.2	Vehicle Parameter Configuration module determines information on whether the product supports various specific functions and returns whether the functions can be used or not.

Vehicle Parameter Configuration in Basesystem

Reference implementation in Basesystem

In the implementation of Basesystem, the function module for Vehicle Parameter Support is Vehicle Parameter Library.

In the implementation of Basesystem, it is assumed that the vehicle parameter information is stored and set in the IVI system as the configuration file. A service specifies the vehicle parameter information to acquire and sends a request to Vehicle Parameter Library, and Vehicle Parameter Library reads the data from the configuration file of vehicle parameter and stores it in the specified address.If the value of the specified variable is not set in the vehicle parameter's configuration file, 0 is returned.

In addition, when the service sends a request to the Vehicle Parameter Library to obtain information on whether the product supports various functions (communication standards, devices, applications, etc.), the Vehicle Parameter Library returns the result of enabled, disabled, or function not existing.

Vehicle Parameter Library

Reference code : https://gerrit.automotivelinux.org/gerrit/gitweb?p=staging/basesystem.git;a=tree;f=service/other/vehicle_parameter_library;h=021a98c97e1a4ab0402595da3f6c4db6e34fd5ba;hb=refs/heads/master