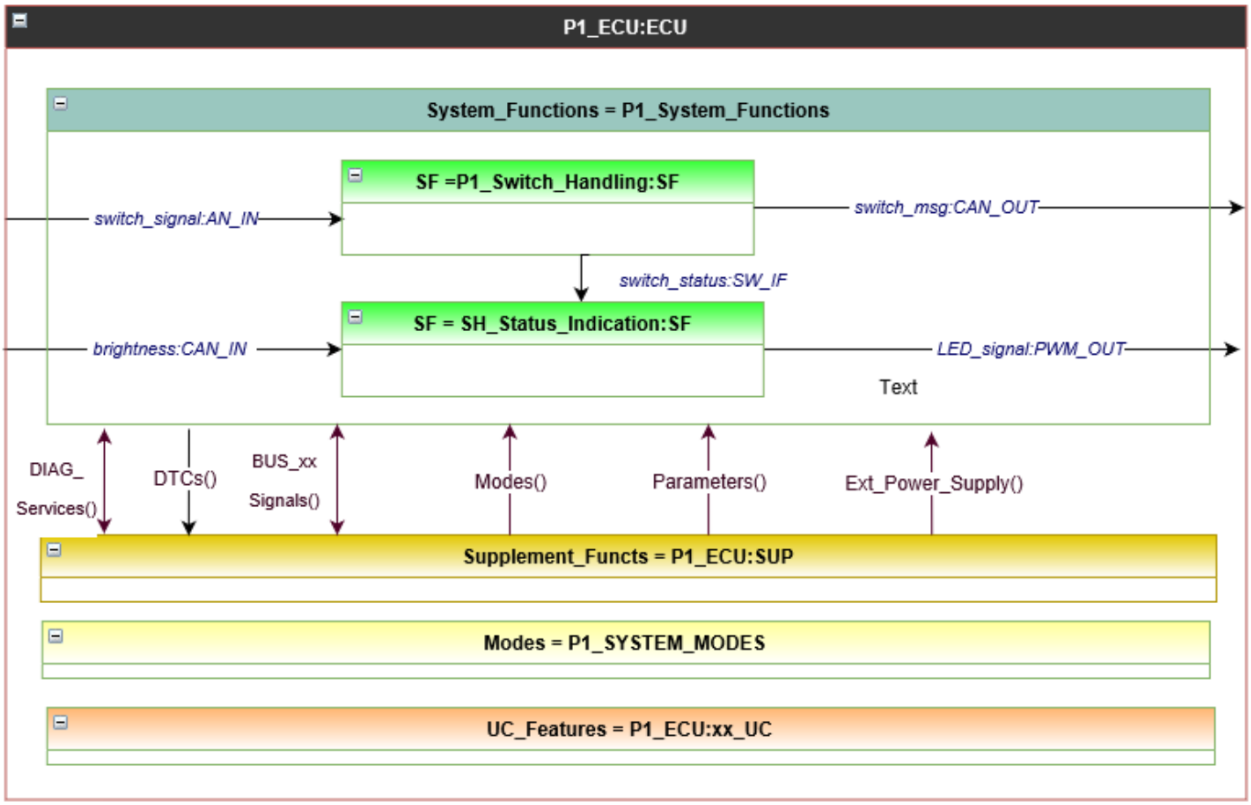
SRS_P1_ECU

1 Scope

This document is describing the Software requirements for the P1_ECU as White-Box.

2 Internal_Block_Diagram

(Note: This diagram is automatically generated out of information provided from the project specific RML classes)



3 Funct_Req_dscr = P1_ECU:ECU

3.1 Internal_Interfaces = its_internal_IFs

(Note: All following IF requirements tables are autmotically generated out of the merged IF Signals)

3.1.1 Internal_IF_1 = switch_status

SRDE-524 -

Name	Type_and _direction	Sender	Receiver	Intended usage	Update_rate	bool	Default Value
switch_status	SW_IF	Measure Switch Status	Evaluate Signals	Trigger of LED illumination	*Execution_rate of sender SF = tdb*	OPEN = Bit 0 is set CLOSED = Bit 1 is set FAULTY = Bit 2 is set	CLOSED

3.2 System_Functions = P1_System_Functions

3.2.1 SF = SWITCH_Handling:SF

Described in separate Sub-Specification ->> SRS_Switch (link).

3.2.2 SF = SH_Status_Indication:SF

Described in separate Sub-Specification ->> SRS_LED (link).

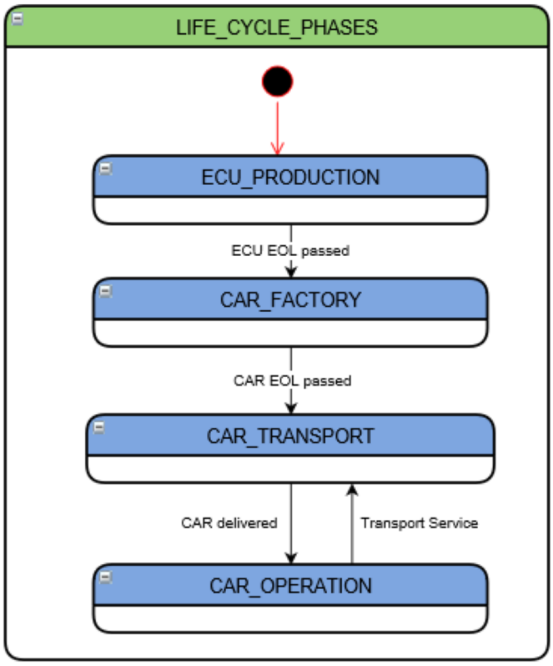
3.3 Supplement_Functions = P1_ECU:SUP

Described in separate Sub-Specification ->> SRS_SUPL (link).

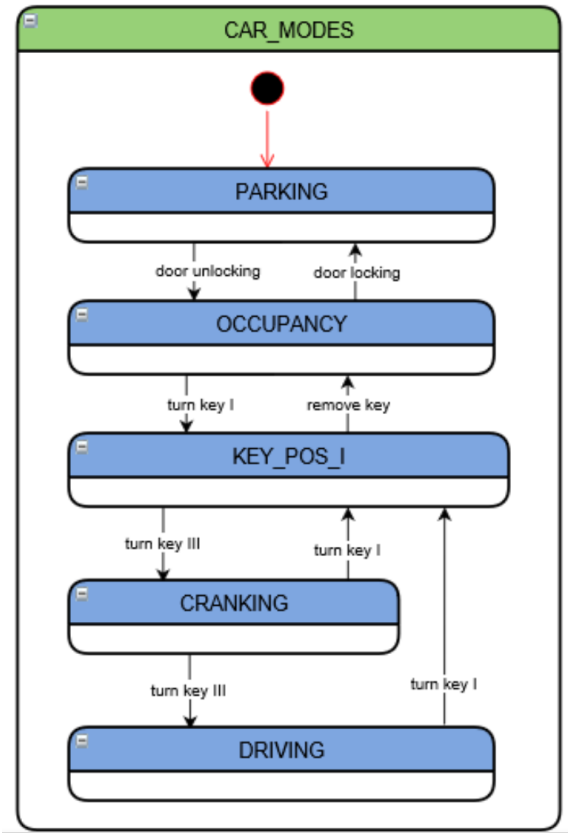
3.4 Modes = its_Modes

(Note: All following mode diagrams are autmotically generated out of the merged Mode RML-Classes)

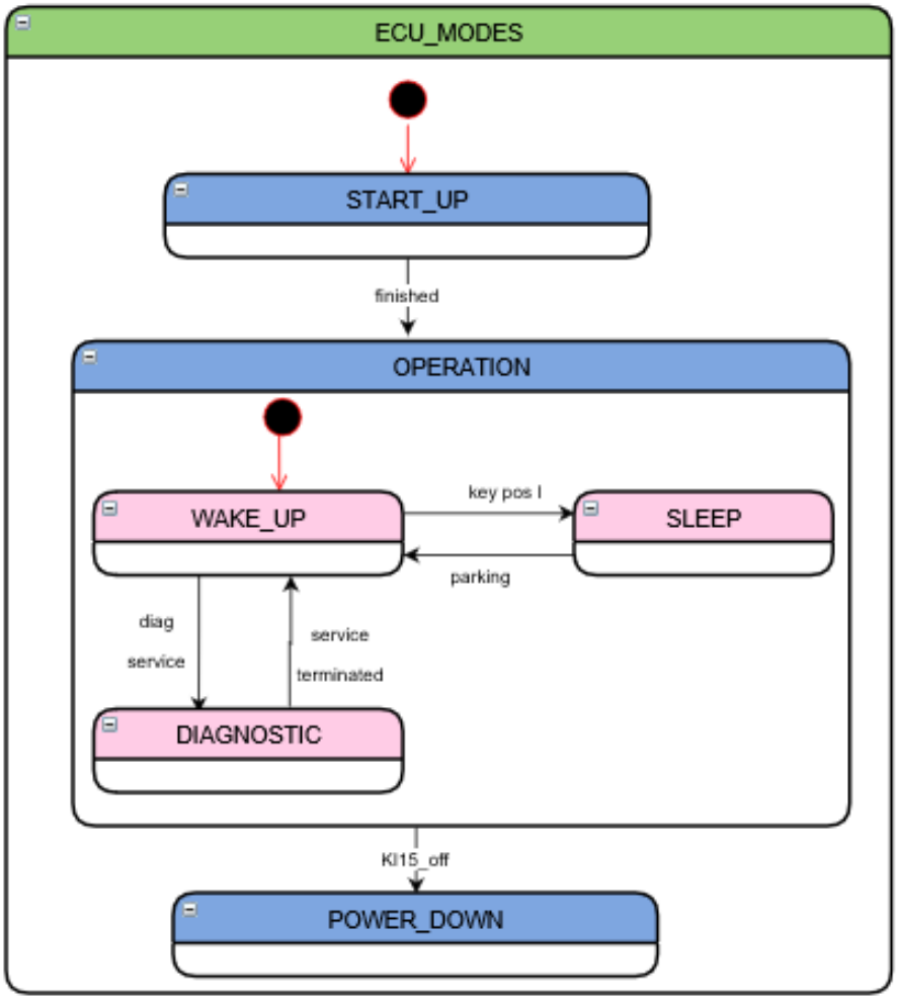
3.4.1 SysMod = LIFE_CYCLE_PHASES



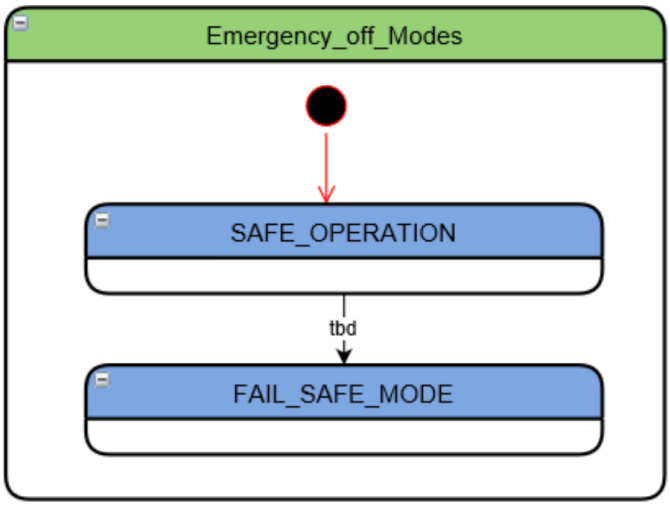
3.4.2 SysMod = CAR_MODES



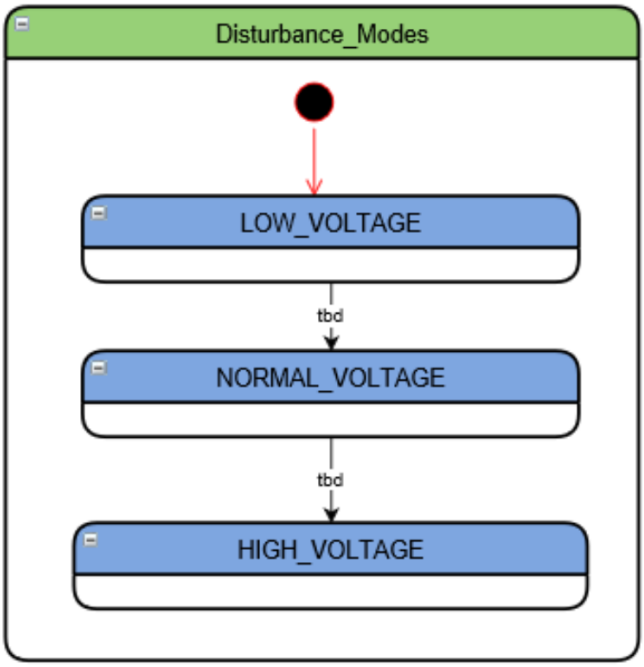
3.4.3 SysMod = ECU_MODES



3.4.4 SysMod = Emergency_off_Modes



3.4.5 SysMod = Disturbance_Modes



3.5 UC_Features = xx_UC_REQ

(Note: The following Standard µController Features are undefined,. as no uC was selected)

Scope = Definition oh Standard µController Features

3.5.1 Frequency

SRDE-557 - Frequency = tbd

3.5.2 Housing

SRDE-556 - Housing = tbd

3.5.3 NVM

SRDE-552 - NVM = tbd

3.5.4 RAM

SRDE-551 - RAM = tbd

3.5.5 EEPROM

SRDE-554 - EEPROM = tbd

3.5.6 Dig_IO_init

SRDE-553 - Dig_IO_init = tbd

3.5.7 ADC_init

SRDE-547 - Sampling_Frequency = tbd

SRDE-546 - Sampling_Mode = tbd

SRDE-550 - AD_Resulution = tbd

SRDE-534 - Reference_Voltage = tbd

3.5.8 CAN_IF_init

SRDE-533 - Operation frequency = tbd

SRDE-538 - Protocol = tbd

SRDE-536 - Buffer_size = tbd

SRDE-527 - Buffer_location = tbd

SRDE-526 - Overflow_handling = tbd

3.5.9 PWM_IF_init

SRDE-532 - PWM_init = tbd

3.5.10 TIC_IF_init

SRDE-646 - TIC_IF_init = tbd

3.5.11 I2C_IF_init

SRDE-647 - I2C_IF_init = tbd

3.5.12 SPI_IF_init = All SPIs

SRDE-648 - SPI_init = tbd

3.5.13 UART_IF_init = All UARTSs

SRDE-649 - UART_IF_init = tbd

3.5.14 Interrupt_init

SRDE-650 - Interrupt_init = tbd

4 Nonfunctional Requirements

4.1 Quality_Req

SRDE-513 - The system shall have high qualitiy.

4.2 Reusability_Req

SRDE-514 - All components of the system shall be reusable.

4.3 Criticalty

SRDE-656 - Crtiticality = tbd

5 Abbreviations = Used_Abbreviations

P1 = "Project 1 (Example Project)"

BCP = "Body Control Platform"

ECU = "Electronic Control Unit"

IF = "Interface"

SF = "System Function"

SRD = "System Requirement Description"

SUPL = "Supplement"

UC = "Microcontroller"

PLCC = "Plastic Leaded Chip Carrier"

NVM = "Non-volatile memory"

RAM = "Random access memory"

EEPROM = "electrically erasable programmable read only memory"

Dig_IO = "Digital Input Output"

ADC = "Analog Digital covnerter"

CAN = "Controller Area Network"

tbd = "To be defined"

PWM = "pulse wide modulation"

I2C = "Inter-Integrated Circuit"

SPI = "Serial Peripheral Interface"

UART = "Universal Asynchronous Receiver Transmitter"

init = "initialization"

req = "requirement"

NF_Req ="non-functional requirement"