

# Application Note

## RAMParity

### (RAMP-B)

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### 1. Preface

This application note describes sample software for the RAM parity check function.  
This document helps the user check operation of a product under development and develop its program.

### 2. Technical Term

Term/Abbreviation	Definition
CG	Clock Control and Operation Mode
RAMP	RAM Parity
UART	Universal Asynchronous Receiver Transmitter

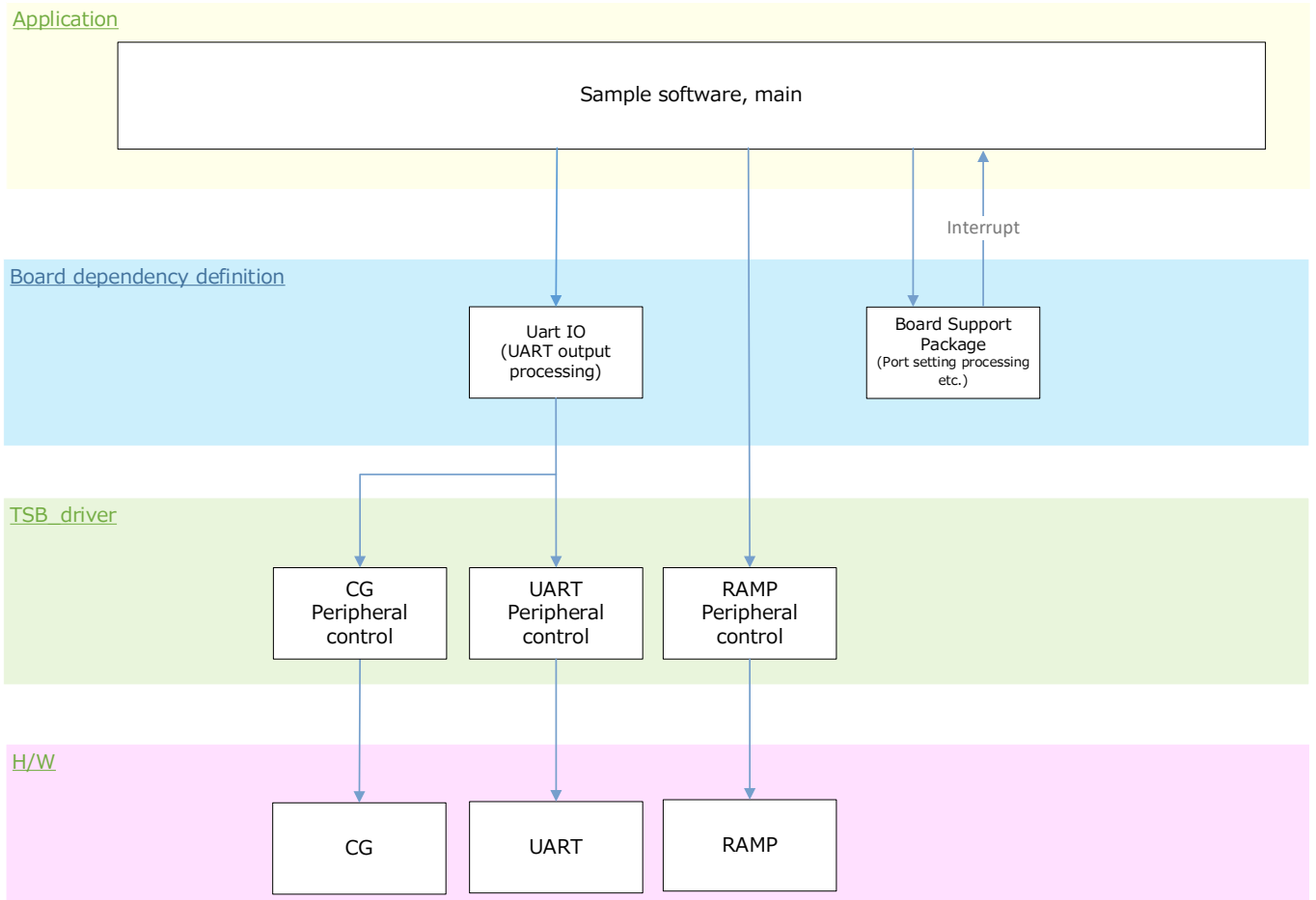
### 3. Reference Document

Document	Notes
Data sheet	Refer to the data sheet of MCU to be used.
Reference manual	Refer to the reference manual of each IP to be used.
Application note MCU User Guide	Refer to the MCU user guide to be used.

## 4. Target Sample Program

Sample Program	Outline
RAMParity	Sample program of RAMParity function

## 5. Configuration Diagram



## 6. Sample Program:RAMParity

This is sample software that saves the character string input from the terminal emulator by adding parity to the RAM using the write command, and then uses a read command to check the parity of the data stored in RAM and displays it to the terminal emulator.

### 6.1. Outlines of Operation

If a Command is entered, the process will be performed according to the entered Command.  
 Use the write command to add parity to RAM and save it.  
 Use the read command to check the parity of the data saved in RAM and display it on the console.

### 6.2. Function to Use

The functions to use are as follows:  
 For the Port assignment of each BSP channel, refer to the MCU user guide.

IP	Channel	Objective
UART	BSP_UART_1	For terminal emulator communication Used for operation Log output and data input

### 6.3. Interrupt to Use

Interrupt	Outlines
INTPARI	RAMP RAM Parity interrupt
INTUART0RX	UART ch0 Receive interrupt for terminal emulator
INTUART0TX	UART ch0 Transmission interrupt for terminal emulator
INTUART0ERR	UART ch0 Error interrupt for terminal emulator

### 6.4. Configuration

“main.c” configuration setting.

Configuration	Current Value	Description
Write DATA MAX.	10 characters	Number of input characters
RAM TOP ADDRESS	0x20001000	RAM name: ram1, when changing the address, place it in RAM Area 0,1

## 6.5. Example of Terminal Emulator Output

### 6.5.1. Normal Operation

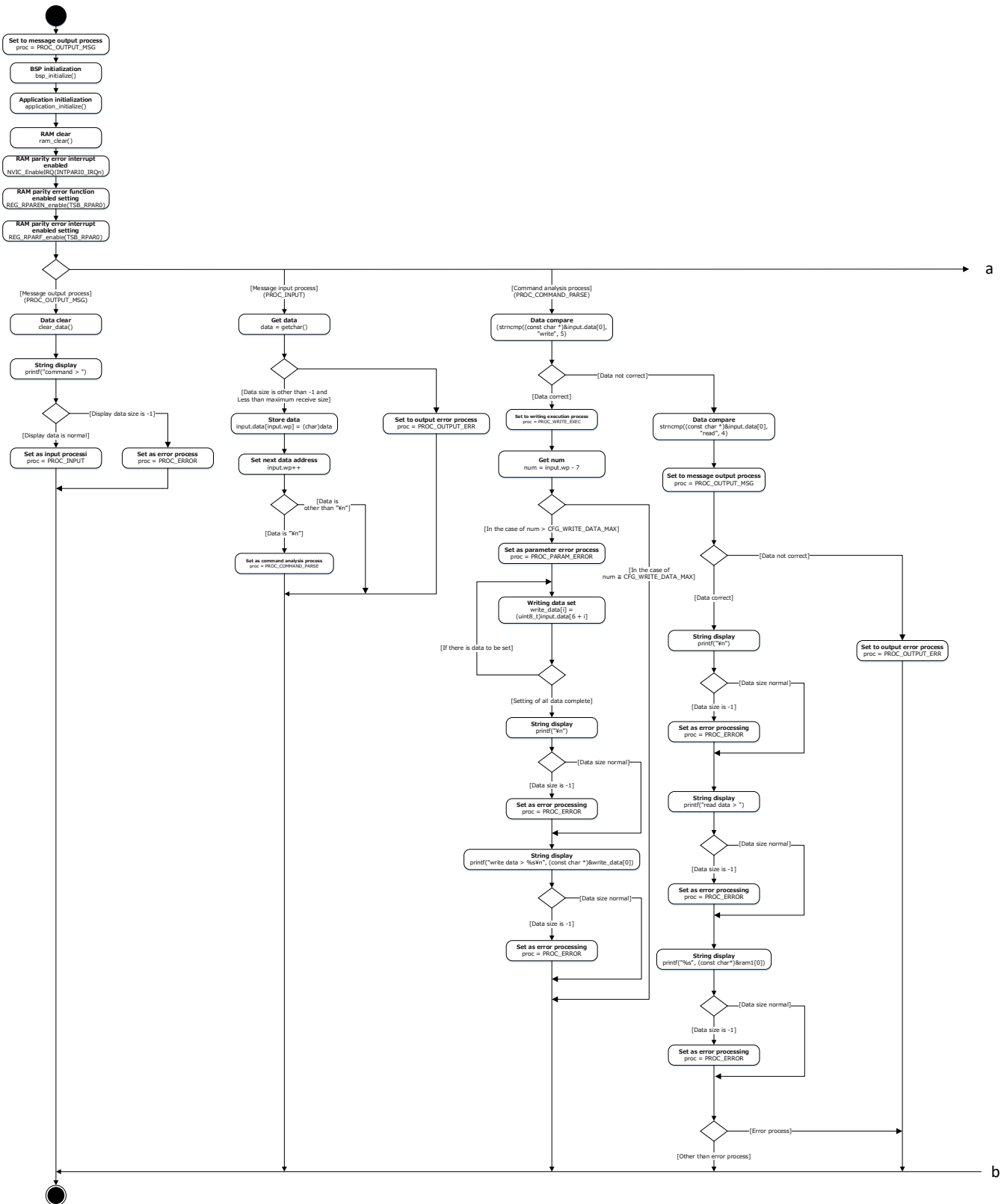
```
command > write 0  
write data > 0  
command > read  
read data > 0
```

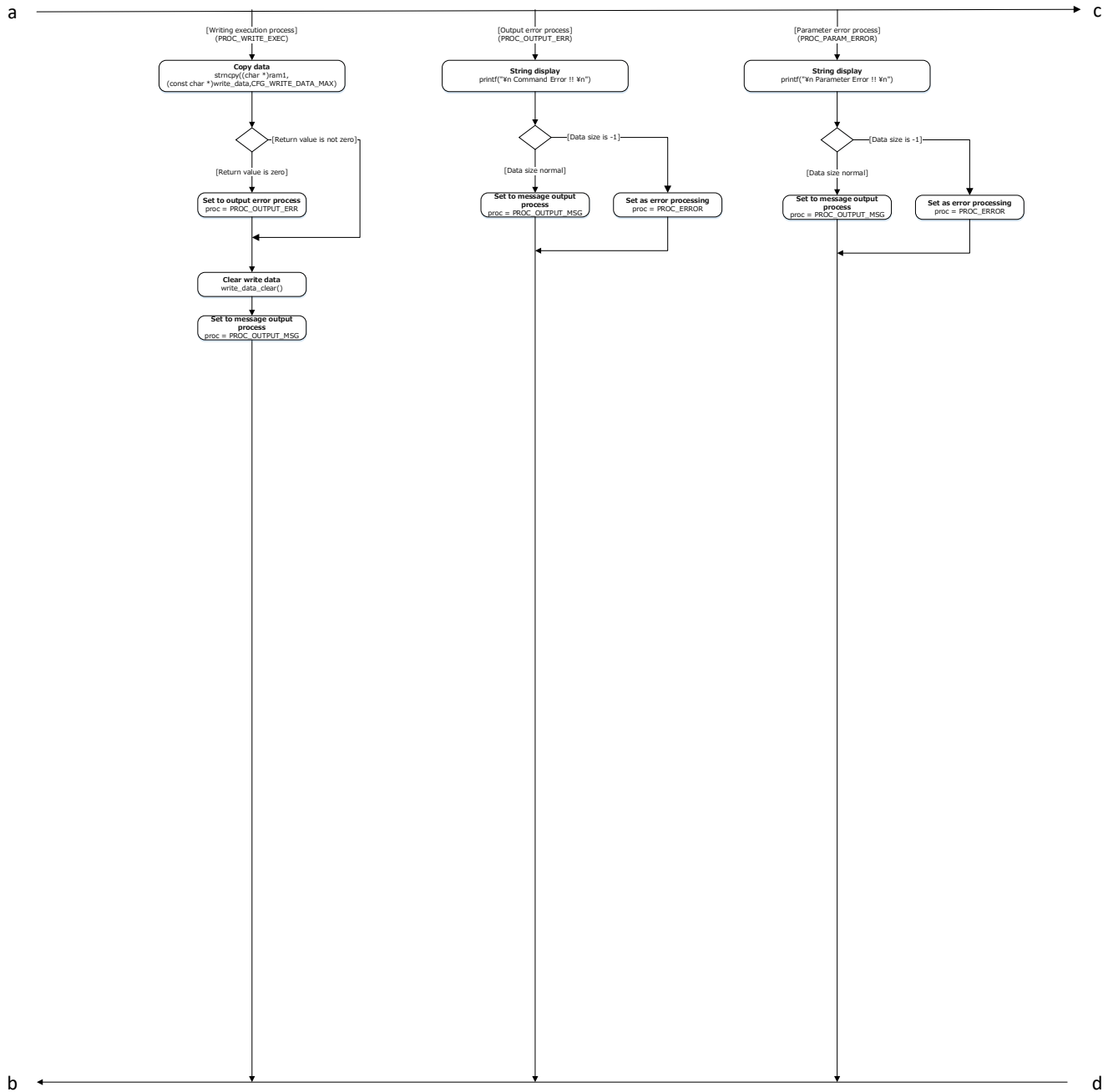
### 6.5.2. Case of Error Occurrence

```
command > A  
Command Error !!  
  
command > write 0123456789  
write data > 012345679  
  
command > write 0123456789A  
Parameter Error !!
```

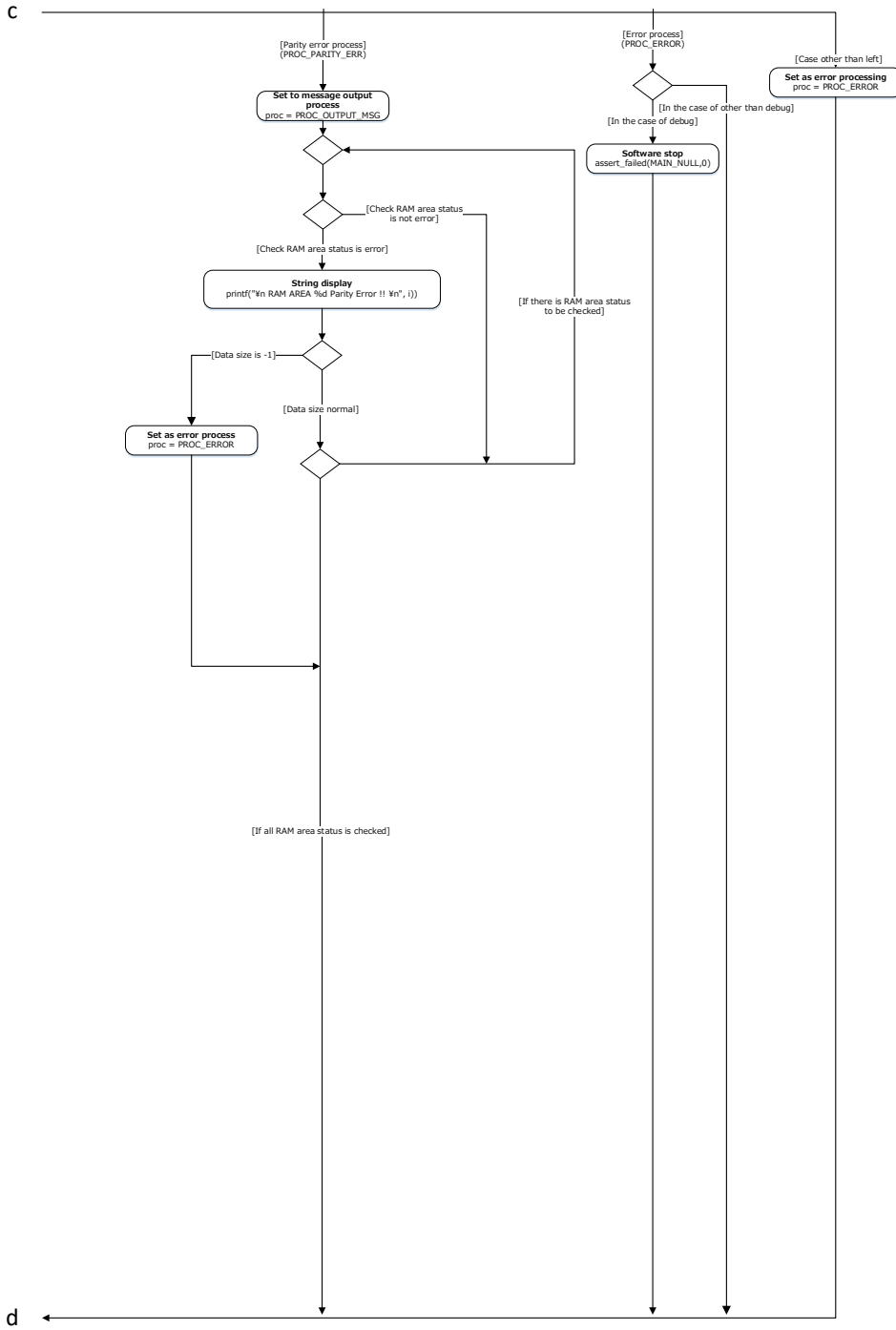
### 7. Activity diagram

#### 7.1. main

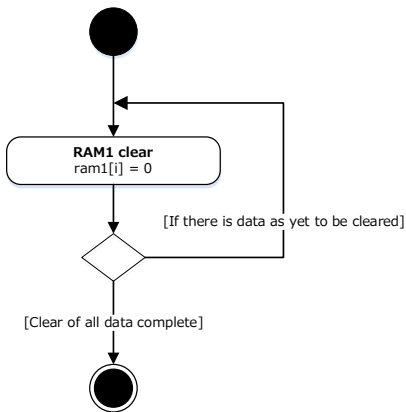




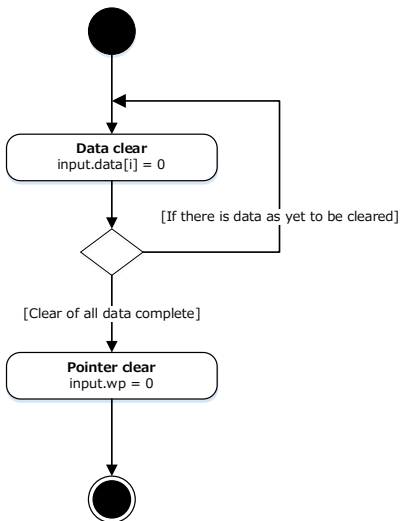




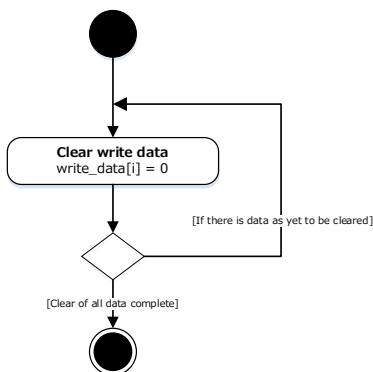
### 7.2. ram\_clear



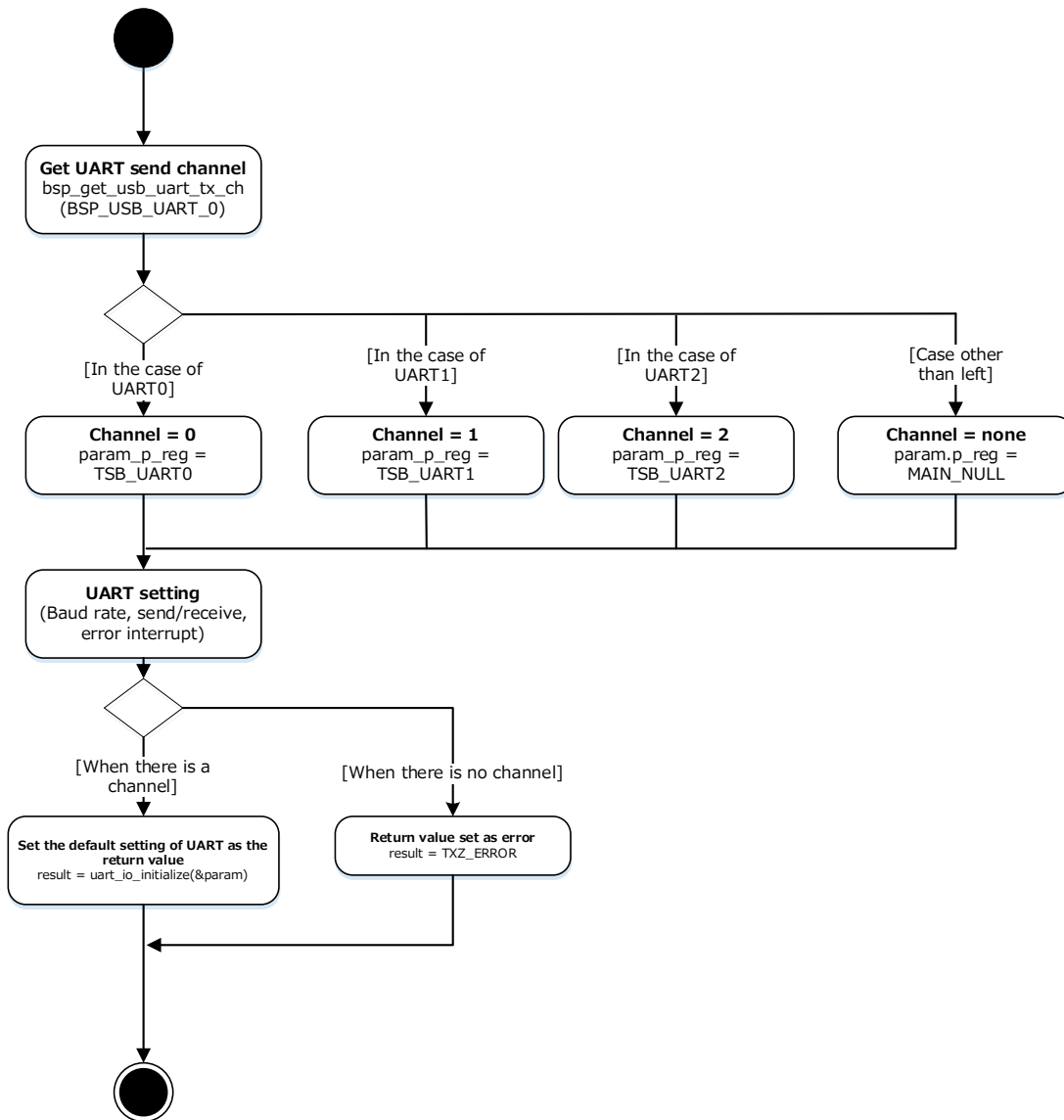
### 7.3. clear\_data



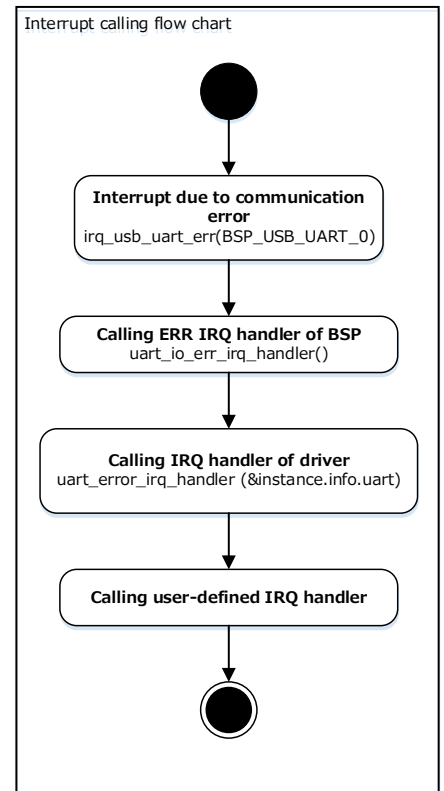
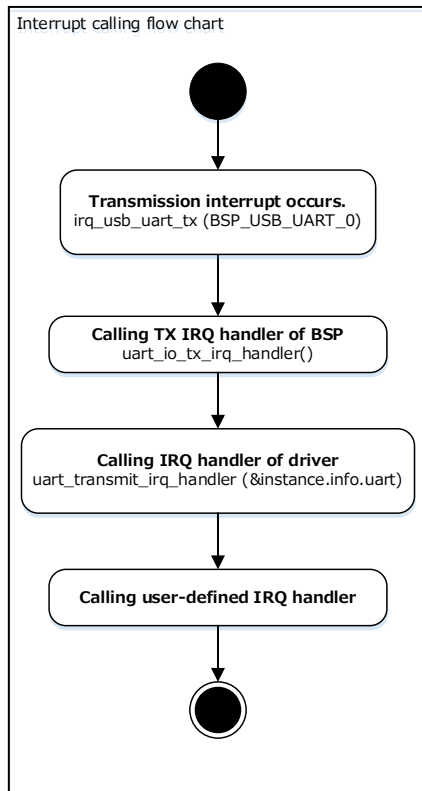
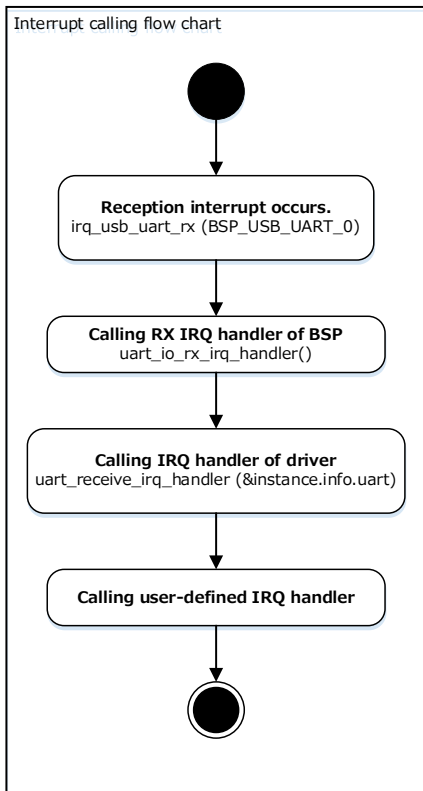
### 7.4. write\_data\_clear



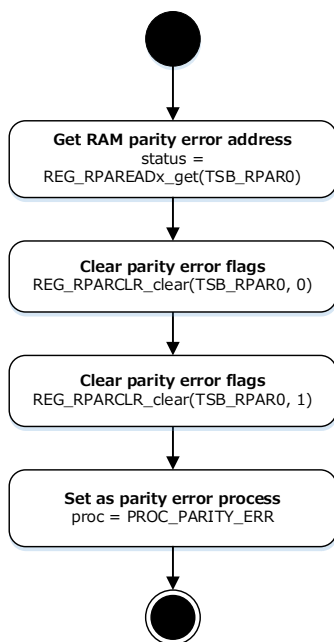
### 7.5. application\_initialize



### 7.6. Interrupt



irq\_parity



## 8. Revision History

Revision	Date	Description
1.0	2023-10-16	First release

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