AsahiKASEI

AK9754 approach and departure detection
Operation check sample

ASAHI KASEI MICRODEVICES CORPORATION

Outline

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  - main_OC.c
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Introduction

Purpose

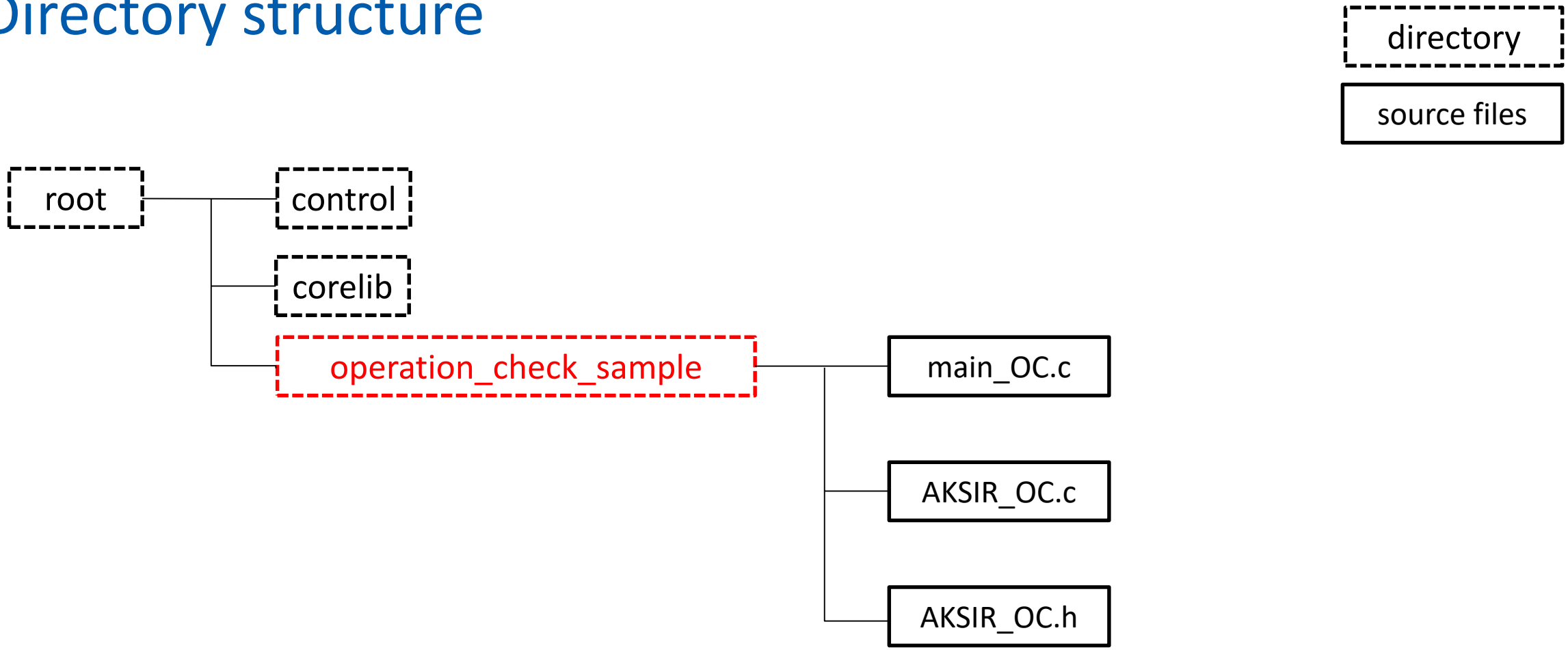
- These souece codes are examples that you can refer to to make sure that
  - AK9754 is implemented correctly
  - the departure detection algorithm is implemented orrectly

  to incorporate the algorithm into customer's system.

About source code files

Directory structure

AsahiKASEI



How to check

Brief over view

main_OC.c

Refer to this code and rewrite the control code (main.c).

You can check below using this code.

- Whether electric connection between AK9754 and MCU is correct
- Whether infrared rays reach the AK9754 enough.

AKSIR_OC.c

It is recommended to perform after checking the above.

If main.c was rewritten to perform checking the above, please put it back.

Refer to this code and rewrite the control code (main.c).

Check if execution of the departure detection algorithm succeed.

In Absent state, approach detection goes normally.

In Present state, dummy IR data that departure is detected after a certain period of time (3 seconds as default) is created, and the data is input into algorithm.

main_OC.c

How to use main_OC.c

- main_OC.c

  Refer to main_OC.C and delete

```
ret = PrepareDepartDetection();
if (ret != CONTROL_SUCCESS) {
        return ret;
}
```

  in

```
if (is_detected == TRUE) {
        ...
}
```

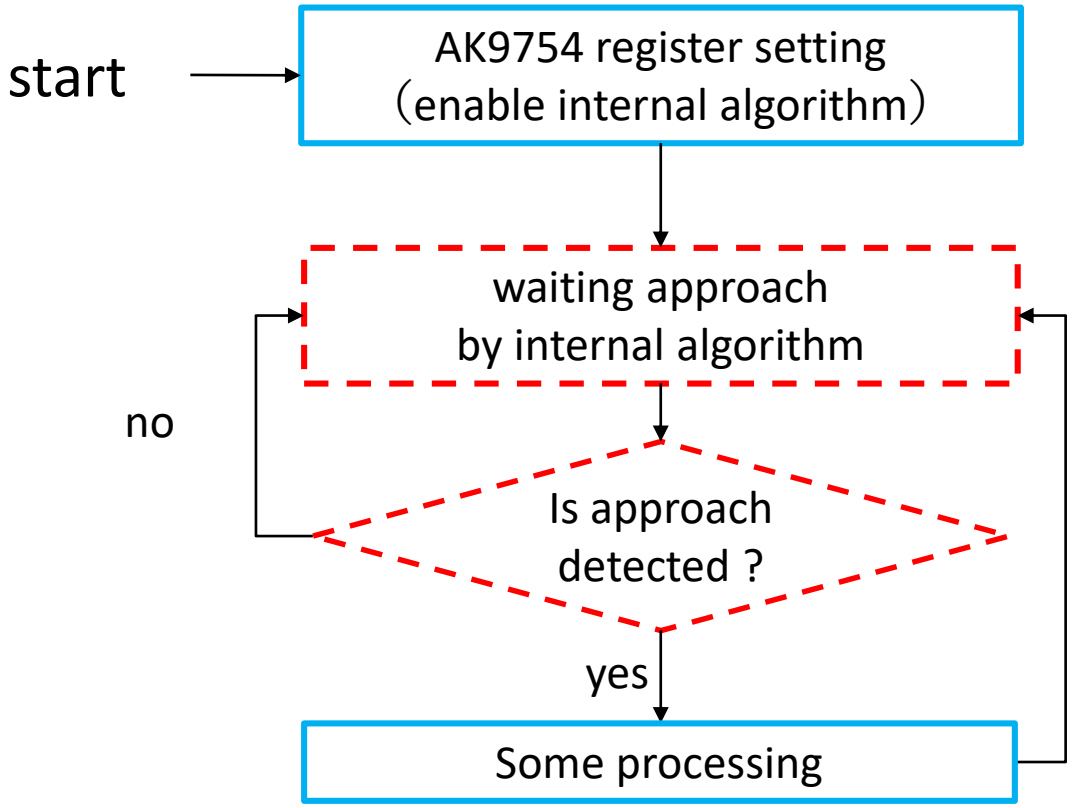
  block.

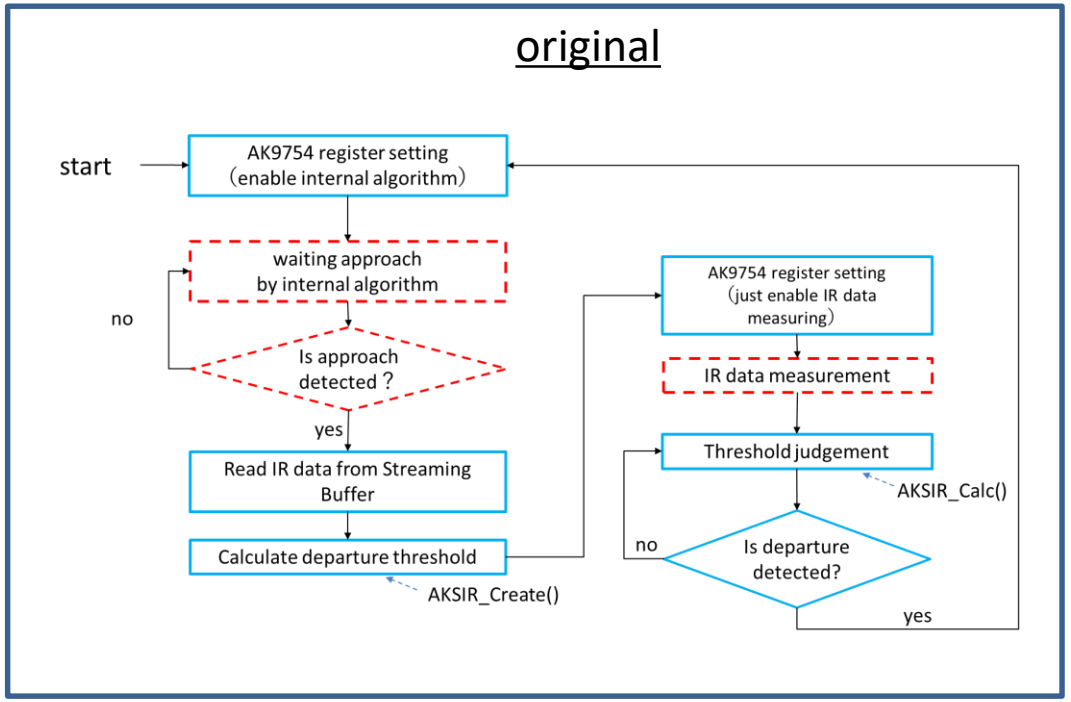
  By doing this, the approach detection algorithm is immediately restarted without running the departure detection algorithm after approach detection.

  If the internal algorithm works correctly, this block will be executed after approach detection.

  Please implement some processing such as controlling LED to check execution of this block.

Operation flow





AKSIR_OC.c

How to use AKSIR_OC.c

- AKSIR_OC.c

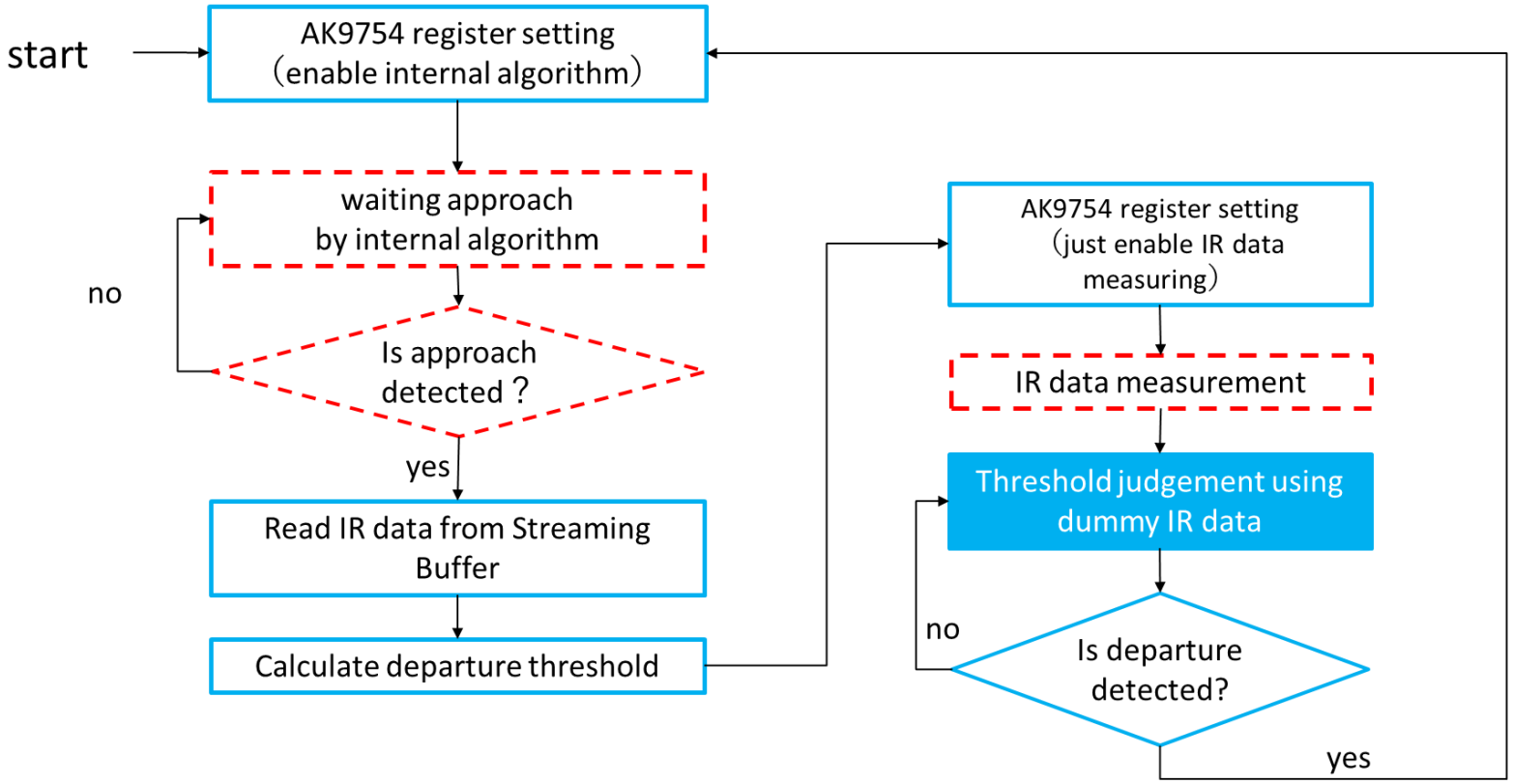
  Rewrite `AKSIR_Calc( … ){ … }` at line 214 in main.c to `AKSIR_CalcOc( … ){ … }` .

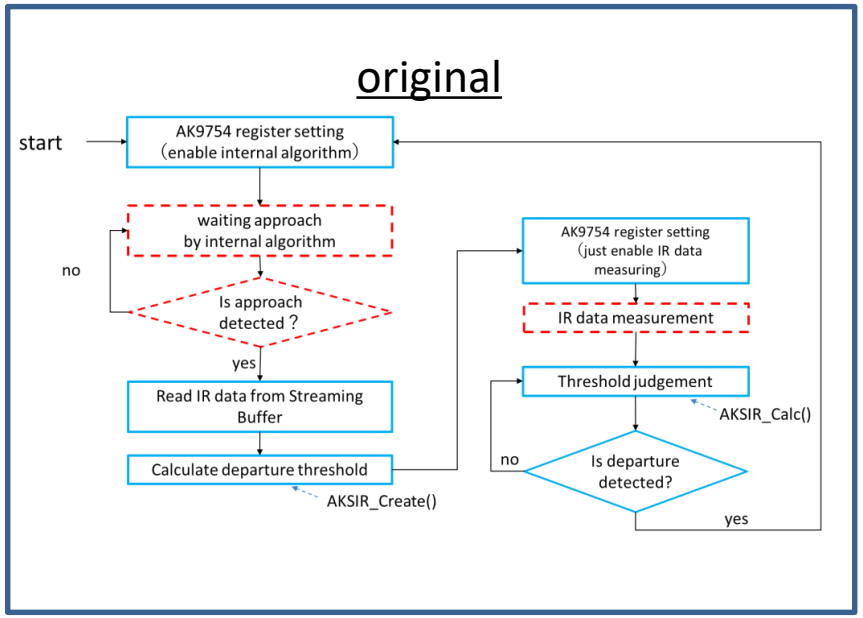
  Include AKSIR_OC.h in main.c. `#include “AKSIR_OC.h”`

  In AKSIR_CalcOc, dummy IR values are created and real IR values are replaced with dummy IR.
  As a default (ODR:2Hz, NUMBER_OF_DEPARTURE_COUNTS:3), departure will be detected in 3 seconds after approach is detected.

  If above succeed, execution of departure algorithm was done correctly.
  Delete include of AKSIR_OC.h and rewrite AKSIR_CalcOc back to AKSIR_Calc.
  Adjust parameters if necessary.

Operation flow





Creating for Tomorrow

The commitment of the Asahi Kasei Group:
To do all that we can in every era to help the people of the world
make the most of life and attain fulfillment in living.
Since our founding, we have always been deeply committed
to contributing to the development of society,
boldly anticipating the emergence of new needs.
This is what we mean by “Creating for Tomorrow.”

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