RF_MOTION_DETECTOR v1.0

SOFTWARE LIBRARY FOR AUTOMATIC DETECTION OF MOVING OBJECTS ON VIDEO

The **RF_MOTION_DETECTOR** software library is intended for automatic detection of moving objects on video, and represents a set of **source files** for inclusion in C++ projects. The C language version is available on request. The library allows to build both single- and multi-channel detection systems, has high performance characteristics, and is compatible with all types of processor systems. The use of the **RF_MOTION_DETECTOR** library will allow you to create your own effective detection, warning and counteraction systems.

FIELD OF APPLICATION

Stationary systems for detection of air objects, perimeter security systems, mobile weapon systems, reconnaissance systems, industrial machine vision systems.

HOSTING PLATFORMS AND COMPATIBILITY

The **RF_MOTION_DETECTOR** software library can make use of any processor platforms as a hosting platform. The library has been developed in C++ language (C++98 standard). Computations are performed in one flow. Compatibility is ensured with any C++ compilers that support the above standard. The software library can be used on such processors as x86, ARM, DSP (digital signal processors), etc.

AMD (intel) ARM TEXAS INSTRUMENTS

WHAT'S IMPLEMENTED

- The algorithm for calculating the motion mask based on the analysis of several hypotheses of the background environment.
- Minimum memory requirements (no more than 32 kilobytes of statically allocated memory). The amount of dynamically allocated memory depends on the size of the processed frames.
- The algorithm for analyzing the object motion trajectory on video frames, which allows to significantly reduce the probability of false alarm when there is interference in the frame.

TESTS OF PERFORMANCE

To evaluate performance for a specific computing platform, a developer can use the demonstration program. If necessary, performance tests can be provided for various operating systems and computing platforms.

FEATURES AND CAPABILITIES

High operating speed. Processing of up to 100 frames per second at one computation flow (Intel core i7 processors).

Possibility of building both single- and multi-channel systems for detection of moving objects.

Detection of moving objects with the size from 8x8. The maximum size of the detected objects is limited by the size of frames.

Detection of all types of objects of any shape. Detection even with a continuous change in the shape and size of the object.

The object will not be lost, if it's overlapped with an occluder. The library gives only the position of the detected objects.

Accuracy of the coordinates calculation of the rectangle around the object is 1 pixel. The algorithm does not calculate the speed.

Detection of dynamic objects. Permissible displacements of the object in one frame are specified in the algorithm parameters during initialization.

Resistance to changes in lighting and observation conditions. Quick adaptation to changes of the camera position.

The minimum amount of statically allocated memory (no more than 32 kilobytes for one instance of the program class).

Quick adaptation to customer's requirements (changes in operating modes and in the algorithm for processing of trajectory information).

Easy integration. The library does not require any configuration. It is supplied as a few source code files in C++.