Here is a list of all modules:

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Generated on Fri Nov 24 2017 16:59:13 for MotionSM Software Library by doxygen 1.8.9.1
# MotionSM Software Library

MotionSM Software Library Documentation

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<tr>
<td><strong>MOTION_SM</strong></td>
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<td><strong>MOTION_SM_Exported_Functions</strong></td>
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<td>Main Page</td>
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<tr>
<td>-----------</td>
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</table>

**MOTION_SM_Exported_Types**

MotionSM Software Library Documentation
Data Structures

<table>
<thead>
<tr>
<th>struct</th>
<th>MSM_input_t</th>
</tr>
</thead>
<tbody>
<tr>
<td>struct</td>
<td>MSM_output_t</td>
</tr>
</tbody>
</table>
### Enumerations

```c
enum MSM_sleep_t { MSM_NOSLEEP = 0x00, MSM_SLEEP = 0x01 }
```
Detailed Description

Enumeration Type Documentation

```c
enum MSM_sleep_t {
    MSM_NOSLEEP,
    MSM_SLEEP,
};
```

Definition at line 63 of file `motion_sm.h`. 
#include <motion_sm.h>
<table>
<thead>
<tr>
<th>Data Fields</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>float</td>
<td>AccX</td>
</tr>
<tr>
<td>float</td>
<td>AccY</td>
</tr>
<tr>
<td>float</td>
<td>AccZ</td>
</tr>
</tbody>
</table>
Detailed Description

Definition at line 69 of file motion_sm.h.
Field Documentation

float AccX

Definition at line 71 of file motion_sm.h.

float AccY

Definition at line 72 of file motion_sm.h.

float AccZ

Definition at line 73 of file motion_sm.h.

The documentation for this struct was generated from the following file:

- Middlewares/ST/STM32_MotionSM_Library/Inc/motion_sm.h
#include <motion_sm.h>
# Data Fields

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM_sleep_t</td>
<td>SleepFlag</td>
</tr>
<tr>
<td>uint32_t</td>
<td>TotalSleepTime</td>
</tr>
</tbody>
</table>
Detailed Description

Definition at line 76 of file motion_sm.h.
Field Documentation

**MSM_sleep_t** SleepFlag

Definition at line 78 of file *motion_sm.h*.

**uint32_t** TotalSleepTime

Definition at line 79 of file *motion_sm.h*.

The documentation for this struct was generated from the following file:

- Middlewares/ST/STM32_MotionSM_Library/Inc/*motion_sm.h*
# MotionSM Software Library

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</table>

**MOTION_SM_Exported_Functions**

MIDDLEWARES » MOTION_SM
# Functions

<table>
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<tr>
<th>Function</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><code>MotionSM_Initialize (void)</code></td>
<td>Initialize the MotionSM engine.</td>
</tr>
<tr>
<td></td>
<td>More...</td>
</tr>
<tr>
<td><code>MotionSM_SetOrientation_Acc (const char *acc_orientation)</code></td>
<td>Set the MotionSM accelerometer data orientation.</td>
</tr>
<tr>
<td></td>
<td>More...</td>
</tr>
<tr>
<td><code>MotionSM_Update (MSM_input_t *data_in, MSM_output_t *data_out)</code></td>
<td>Run sleep monitoring algorithm.</td>
</tr>
<tr>
<td></td>
<td>More...</td>
</tr>
<tr>
<td><code>MotionSM_Reset (void)</code></td>
<td>Reset sleep monitoring algorithm.</td>
</tr>
<tr>
<td></td>
<td>More...</td>
</tr>
<tr>
<td><code>MotionSM_GetLibVersion (char *version)</code></td>
<td>Get the library version.</td>
</tr>
<tr>
<td></td>
<td>More...</td>
</tr>
</tbody>
</table>
Detailed Description

Function Documentation

```c
uint8_t MotionSM_GetLibVersion ( char * version )
```

Get the library version.

**Parameters**

*version* Pointer to an array of 35 char

**Return values**

*Number* of characters in the version string

```c
void MotionSM_Initialize ( void )
```

Initialize the MotionSM engine.

**Parameters**

*none*

**Return values**

*none*

```c
void MotionSM_Reset ( void )
```

Reset sleep monitorin algorithm.

**Parameters**

*none*
Return values
  none

void MotionSM_SetOrientation_Acc ( const char * acc_orientation )

Set the MotionSM accelerometer data orientation.

Parameters
  *acc_orientation reference system of the accelerometer raw data (for instance: south west up became "swu", north east up became "ned")

Return values
  none

void MotionSM_Update ( MSM_input_t * data_in,
                        MSM_output_t * data_out
                )

Run sleep monitoring algorithm.

Parameters
  data_in Pointer to acceleration in [g]
  data_out pointer to output data (sleep indication, total sleep time)

Return values
  none
Data Structures

Here are the data structures with brief descriptions:

- MSM_input_t
- MSM_output_t
## Data Structure Index

<table>
<thead>
<tr>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MSM_output_t</strong></td>
</tr>
<tr>
<td><strong>MSM_input_t</strong></td>
</tr>
</tbody>
</table>

Generated on Fri Nov 24 2017 16:59:13 for MotionSM Software Library by [doxygen](http://www.stackexchange.com) 1.8.9.1
Here is a list of all struct and union fields with links to the structures/unions they belong to:

- AccX : `MSM_input_t`
- AccY : `MSM_input_t`
- AccZ : `MSM_input_t`
- SleepFlag : `MSM_output_t`
- TotalSleepTime : `MSM_output_t`
- AccX : MSM_input_t
- AccY : MSM_input_t
- AccZ : MSM_input_t
- SleepFlag : MSM_output_t
- TotalSleepTime : MSM_output_t
## File List

Here is a list of all files with brief descriptions:

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<td>▼ ST</td>
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<tr>
<td>▼ STM32_MotionSM_Library</td>
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<tr>
<td>▼ Inc</td>
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<tr>
<td>motion_sm.h</td>
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Generated on Fri Nov 24 2017 16:59:13 for MotionSM Software Library by `doxygen` 1.8.9.1
## Middlewares Directory Reference
## Directories

| directory | ST |

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</thead>
<tbody>
<tr>
<td>Middlewares</td>
<td>ST</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ST Directory Reference**
Directories

| directory     | STM32_MotionSM_Library |

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<tr>
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</table>

STM32_MotionSM_Library Directory Reference
Directories

| directory | Inc |

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<table>
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<th>Modules</th>
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</thead>
<tbody>
<tr>
<td>Middlewares</td>
<td>ST</td>
<td>STM32_MotionSM_Library</td>
<td>Inc</td>
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</table>

**Inc Directory Reference**
## Files

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<th>file</th>
<th><strong>motion_sm.h</strong> [code]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Header for motion_sm module.</td>
</tr>
</tbody>
</table>

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motion_sm.h File

Reference

Header for motion_sm module. More...

#include <stdint.h>

Go to the source code of this file.
Data Structures

<table>
<thead>
<tr>
<th>struct</th>
<th>MSM_input_t</th>
</tr>
</thead>
</table>

| struct | MSM_output_t |
## Enumerations

```c
enum MSM_sleep_t { MSM_NOSLEEP = 0x00, MSM_SLEEP = 0x01 }
```
## Functions

<table>
<thead>
<tr>
<th>Type</th>
<th>Function Name</th>
<th>Description</th>
<th>More</th>
</tr>
</thead>
<tbody>
<tr>
<td>void</td>
<td><code>MotionSM_Initialize (void)</code></td>
<td>Initialize the MotionSM engine.</td>
<td>More</td>
</tr>
<tr>
<td>void</td>
<td><code>MotionSM_SetOrientation_Acc (const char *acc_orientation)</code></td>
<td>Set the MotionSM accelerometer data orientation.</td>
<td>More</td>
</tr>
<tr>
<td>void</td>
<td><code>MotionSM_Update (MSM_input_t *data_in, MSM_output_t *data_out)</code></td>
<td>Run sleep monitoring algorithm.</td>
<td>More</td>
</tr>
<tr>
<td>void</td>
<td><code>MotionSM_Reset (void)</code></td>
<td>Reset sleep monitoring algorithm.</td>
<td>More</td>
</tr>
<tr>
<td>uint8_t</td>
<td><code>MotionSM_GetLibVersion (char *version)</code></td>
<td>Get the library version.</td>
<td>More</td>
</tr>
</tbody>
</table>
Detailed Description

Header for motion_sm module.

Author
MEMS Application Team

Version
V1.0.0

Date
01-November-2017

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Definition in file motion_sm.h.
Here is a list of all functions, variables, defines, enums, and typedefs with links to the files they belong to:

- MotionSM_GetLibVersion() : motion_sm.h
- MotionSM_Initialize() : motion_sm.h
- MotionSM_Reset() : motion_sm.h
- MotionSM_SetOrientation_Acc() : motion_sm.h
- MotionSM_Update() : motion_sm.h
- MSM_NOSLEEP : motion_sm.h
- MSM_SLEEP : motion_sm.h
- MSM_sleep_t : motion_sm.h
MotionSM Software Library

MotionSM Software Library Documentation

- MotionSM_GetLibVersion() : `motion_sm.h`
- MotionSM_Initialize() : `motion_sm.h`
- MotionSM_Reset() : `motion_sm.h`
- MotionSM_SetOrientation_Acc() : `motion_sm.h`
- MotionSM_Update() : `motion_sm.h`
- **MSM_sleep_t**: `motion_sm.h`
• MSM_NOSLEEP : motion_sm.h
• MSM_SLEEP : motion_sm.h
Go to the documentation of this file.

```c
/* Define to prevent recursive inclusion ----------------------------------*/
#endif
#define __cplusplus
extern "C" {
#endif
/* Includes ---------------------------------------------------------------*/
#include <stdint.h>
/* Exported constants -----------------------------------------------------*/
/* Exported types ---------------------------------------------------------*/
typedef enum
{
    MSM_NOSLEEP = 0x00,
    MSM_SLEEP = 0x01
} MSM_sleep_t;
```
typedef struct {
  float AccX; /* Acceleration in X axis in [g] */
  float AccY; /* Acceleration in Y axis in [g] */
  float AccZ; /* Acceleration in Z axis in [g] */
} MSM_input_t;

typedef struct {
  MSM_sleep_t SleepFlag;
  uint32_t TotalSleepTime;
} MSM_output_t;

/* Exported variables -------------------------------
-----------------------------------------------*/
/* Exported macro ----------------------------------*/
/* Exported functions ------------------------------*/

void MotionSM_Initialize(void);

void MotionSM_SetOrientation_Acc(const char *acc_orientation);

void MotionSM_Update(MSM_input_t *data_in, MSM_output_t *data_out);

void MotionSM_Reset(void);

uint8_t MotionSM_GetLibVersion(char
*version);

#ifdef __cplusplus
#endif
#endif /* _MOTION_SM_H_ */

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*****END OF FILE****/

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