# Modules

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# MotionGR Software Library

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### Modules

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## MotionGR Software Library

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### MOTION_GR_Exported_Types

**MIDDLEWARES ➔ MOTION_GR**
Data Structures

```
struct MGR_input_t
```
### Enumerations

```c
enum MGR_output_t { MGR_NOGESTURE = 0x00, MGR_PICKUP = 0x01, MGR_GLANCE = 0x02, MGR_WAKEUP = 0x03 }
```
### Detailed Description

### Enumeration Type Documentation

```c
enum MGR_output_t
{
    MGR_NOGESTURE,
    MGR_PICKUP,
    MGR_GLANCE,
    MGR_WAKEUP
};
```

Definition at line 71 of file `motion_gr.h`. 

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MGR_input_t Struct

Reference

MIDDLEWARES » MOTION_GR » MOTION_GR_Exported_Types

#include <motion_gr.h>
## Data Fields

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<th>Type</th>
<th>Field</th>
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<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 64 of file `motion_gr.h`. 
Field Documentation

**float AccX**

Definition at line 66 of file `motion_gr.h`.

**float AccY**

Definition at line 67 of file `motion_gr.h`.

**float AccZ**

Definition at line 68 of file `motion_gr.h`.

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

- algorithms/Middlewares/ST/STM32_MotionGR_Library/Inc/motion_gr.h

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## Functions

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<th>Type</th>
<th>Function</th>
<th>Description</th>
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</thead>
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<tr>
<td>void</td>
<td>MotionGR_Initialize (void)</td>
<td>Initialize the MotionGR engine.</td>
<td></td>
</tr>
<tr>
<td>void</td>
<td>MotionGR_SetOrientation_Acc (const char *acc_orientation)</td>
<td>Set the MotionGR accelerometer data orientation.</td>
<td></td>
</tr>
<tr>
<td>void</td>
<td>MotionGR_Update (MGR_input_t *data_in, MGR_output_t *data_out)</td>
<td>Run gesture recognition algorithm.</td>
<td></td>
</tr>
<tr>
<td>uint8_t</td>
<td>MotionGR_GetLibVersion (char *version)</td>
<td>Get the library version.</td>
<td></td>
</tr>
</tbody>
</table>
Detailed Description

Function Documentation

```
uint8_t MotionGR_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

```
void MotionGR_Initialize ( void )
```

Initialize the MotionGR engine.

**Parameters**
- `none`

**Return values**
- `none`

```
void MotionGR_SetOrientation_Acc ( const char * acc_orientation )
```

Set the MotionGR 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

```c
void MotionGR_Update ( MGR_input_t * data_in,
                        MGR_output_t * data_out
                    )
```

Run gesture recognition algorithm.

**Parameters**

- **data_in** pointer to acceleration in [g]
- **data_out** pointer to gesture index

**Return values**

none
## Data Structures

Here are the data structures with brief descriptions:

<table>
<thead>
<tr>
<th>MGR_input_t</th>
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<tr>
<td><strong>M</strong></td>
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<tr>
<td>MGR_input_t</td>
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Generated on Fri Mar 31 2017 11:09:18 for MotionGR Software Library by [doxygen](http://www.stackoverflow.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 : MGR_input_t
- AccY : MGR_input_t
- AccZ : MGR_input_t
- AccX : MGR_input_t
- AccY : MGR_input_t
- AccZ : MGR_input_t
Here is a list of all files with brief descriptions:

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**algorithms Directory Reference**
| directory | Middlewares |

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**Middlewares Directory Reference**
## Directories

| directory | ST |

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ST Directory Reference
Directories

directory **STM32_MotionGR_Library**

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STM32_MotionGR_Library Directory Reference
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| directory | Inc |

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Inc Directory Reference
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<td>STM32_MotionGR_Library</td>
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**motion_gr.h File Reference**

Header for motion_gr module. More...

```c
#include <stdint.h>
```

Go to the source code of this file.
Data Structures

```c
struct MGR_input_t
```

```c
struct MGR_input_t
```
### Enumerations

```c
enum MGR_output_t { MGR_NOGESTURE = 0x00, MGR_PICKUP = 0x01, MGR_GLANCE = 0x02, MGR_WAKEUP = 0x03 }
```
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<td>More</td>
</tr>
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</table>
Detailed Description

Header for motion_gr module.

Author
MEMS Application Team

Version
V2.0.0

Date
01-May-2017

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

- `MGR_GLANCE` : `motion_gr.h`
- `MGR_NOGESTURE` : `motion_gr.h`
- `MGR_output_t` : `motion_gr.h`
- `MGR_PICKUP` : `motion_gr.h`
- `MGR_WAKEUP` : `motion_gr.h`
- `MotionGR_GetLibVersion()` : `motion_gr.h`
- `MotionGR_Initialize()` : `motion_gr.h`
- `MotionGR_SetOrientation_Acc()` : `motion_gr.h`
- `MotionGR_Update()` : `motion_gr.h`
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- MotionGR_GetLibVersion() : motion_gr.h
- MotionGR_Initialize() : motion_gr.h
- MotionGR_SetOrientation_Acc() : motion_gr.h
- MotionGR_Update() : motion_gr.h
• MGR_output_t : motion_gr.h
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- MGR_GLANCE : `motion_gr.h`
- MGR_NOGESTURE : `motion_gr.h`
- MGR_PICKUP : `motion_gr.h`
- MGR_WAKEUP : `motion_gr.h`

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motion_gr.h

Go to the documentation of this file.

```c
/* Define to prevent recursive inclusion --------------------------------*/
#define _MOTION_GR_H_

/* Includes --------------------------------*/
#include <stdint.h>

/* Exported constants ----------------------*/

/* Exported types --------------------------*/

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] */

typedef enum
{
    MGR_NOGESTURE = 0x00,
    MGR_PICKUP = 0x01,
    MGR_GLANCE = 0x02,
    MGR_WAKEUP = 0x03
} MGR_output_t;

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

void MotionGR_Initialize(void);

void MotionGR_SetOrientation_Acc(const char *acc_orientation);

void MotionGR_Update(MGR_input_t *data_in, MGR_output_t *data_out);

uint8_t MotionGR_GetLibVersion(char *version);

#ifdef __cplusplus
}
#endif /*_MOTION_GR_H_*/