SmartHomeDomotic

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Chapter 1

Main Page

This cpp library is based on the bosch driver in C.

Theren't any warranties about the function and the working. Everery dommage will be applies to the developper or user of this library

File bme280.h Date 21.07.2018 Version 0.0.1

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Chapter 5

Class Documentation

5.1 ADS1115 Class Reference

Public Member Functions

- ADS1115 (quint8 device_I2C_Adress=ADS1115_DEFAULT_ADDRESS)
- · quint8 ads i2cAddress () const
- void setAds i2cAddress (const quint8 &ads i2cAddress)
- · quint8 ads fd () const
- void setAds_fd (const quint8 &ads_fd)
- · quint64 ads conversionDelay () const
- void setAds_conversionDelay (const quint64 &ads_conversionDelay)
- adsOSMode_t ads_osmode () const
- void setAds_osmode (const adsOSMode_t &ads_osmode)
- · adsGain t ads gain () const
- void setAds_gain (const adsGain_t &ads_gain)
- adsMode_t ads_mode () const
- void setAds_mode (const adsMode_t &ads_mode)
- adsRate_t ads_rate () const
- void setAds_rate (const adsRate_t &ads_rate)
- adsCompMode t ads_compmode () const
- void setAds_compmode (const adsCompMode_t &ads_compmode)
- adsCompPol_t ads_comppol () const
- void setAds_comppol (const adsCompPol_t &ads_comppol)
- · adsCompLat_t ads_complat () const
- void setAds_complat (const adsCompLat_t &ads_complat)
- adsCompQue_t ads_compque () const
- void setAds compque (const adsCompQue t &ads compque)
- quint16 Measure_SingleEnded_OnlyPositiveValue (quint8 channel)
- float convertValueToVolt (quint16 regValue)
- · quint16 ads_config_register () const
- void setRegister (bool forFirstInit)
- qint16 readConfigRegister ()

Private Member Functions

- void _writeRegister (quint16 regValue)
- qint16 _swapRegister (qint16 regValue)
- qint16 readRegisterOnlyPositiveValue ()
- void _waitDelay (quint64 delayInMiliSeconde)
- void _waitConvertionFinished ()

Private Attributes

- quint8 _ads_i2cAddress
- quint8 _ads_fd
- quint64 _ads_conversionDelay
- · quint16 ads config register
- quint16 _ads_reading_value
- · qint16 _ads_lowthreshold
- · qint16 _ads_highthreshold
- adsOSMode_t _ads_osmode
- adsGain_t _ads_gain
- adsMode t ads mode
- · adsRate_t _ads_rate
- adsCompMode_t _ads_compmode
- adsCompPol_t _ads_comppol
- adsCompLat_t _ads_complat
- adsCompQue_t _ads_compque

The documentation for this class was generated from the following files:

- SmartHomeDomotic/ADS1115/ads1115.h
- SmartHomeDomotic/ADS1115/ads1115.cpp

5.2 ADS1115Item Class Reference

Inheritance diagram for ADS1115Item:

Collaboration diagram for ADS1115Item:

Signals

void sendTankActualVolumeChanged (int objectID, int actualVolume)

Public Member Functions

- ADS1115Item (QString deviceName, quint8 devicel2CAdress, QObject *ADS1115Display=nullptr, QObject *roomDataPlot=nullptr, timerthread *I2CThread=nullptr, QObject *homeViewer=nullptr)
- adsRate_t ads_rate () const
- void setAds_rate (const adsRate t &ads_rate)
- · bool devicelsReady () const
- void setTankChan0VolumeMax (const quint16 &tankChan0VolumeMax)
- void setTankChan1VolumeMax (const quint16 &tankChan1VolumeMax)
- void setTankChan2VolumeMax (const quint16 &tankChan2VolumeMax)
- void setTankChan3VolumeMax (const guint16 &tankChan3VolumeMax)
- void **setTankChan0LiquideInside** (const GlobalEnumerate::E_TankLiquidInside &tankChan0LiquideInside)
- void setTankChan1LiquideInside (const GlobalEnumerate::E_TankLiquidInside &tankChan1LiquideInside)
- void setTankChan2LiquideInside (const GlobalEnumerate:: E TankLiquidInside &tankChan2LiquideInside)
- void **setTankChan3LiquideInside** (const GlobalEnumerate::E_TankLiquidInside &tankChan3LiquideInside)
- void setTanklDchan0 (const quint8 &tanklDchan0)
- void setTankIDchan1 (const quint8 &tankIDchan1)
- void setTanklDchan2 (const guint8 &tanklDchan2)
- void setTanklDchan3 (const quint8 &tanklDchan3)
- void setTankChan0VolumeMaxHeightInMilimeter (const quint16 &tankChan0VolumeMaxHeightIn←)
 Milimeter)
- void setTankChan1VolumeMaxHeightInMilimeter (const quint16 &tankChan1VolumeMaxHeightIn← Milimeter)
- void setTankChan2VolumeMaxHeightInMilimeter (const quint16 &tankChan2VolumeMaxHeightIn←)
 Milimeter)
- void setTankChan3VolumeMaxHeightInMilimeter (const quint16 &tankChan3VolumeMaxHeightIn← Milimeter)
- · bool onReadingData () const
- void readSavedData ()
- DataFrame * dataFrame () const
- void setStartToReadOnData (bool startToReadOnData)
- · bool startToReadOnData () const
- void setOnCalibration (bool onCalibration)
- void setHighMaxValueInPuls (const quint64 &highMaxValueInPuls)

Protected Member Functions

• void run ()

called function when the thread start

Private Member Functions

- void _initDevice ()
- void _insertTextAtHomePage (QString textToInsert)
- void checkStateOfDevice ()
- void _initConfigDevice ()
- bool _checkRegisterConfiguration ()
- void _readDatal2C (DataFrame *dataFrame=nullptr)
- void _continueReadingAllValue ()
- void _waitDelay (quint64 delaySeconde)
- void _waitDelayMili (quint64 delayInMiliSeconde)
- void _waitDelayMicro (quint64 delayInMicroSeconde)
- void _goToNextState ()
- quint16 _meanList (QList< quint16 > &listToMean)

Private Attributes

- QObject * _tanksDataPlot
- QObject * _homeViewer
- timerthread * _I2CThread
- · QString _deviceName
- quint8 _devicel2CAdress
- · quint8_fd
- ADS1115 * _ads1115
- DataFrame * _dataFrame
- adsRate_t _ads_rate
- bool _deviceIsReady
- · bool onReadingData
- bool_startToReadOnData
- bool _onCalibration
- quint64 highMaxValueInPuls
- quint8 _tankIDchan0
- · quint8 _tankIDchan1
- quint8 tankIDchan2
- quint8 _tankIDchan3
- quint16 _tankChan0VolumeMax
- quint16 _tankChan1VolumeMax
- quint16 _tankChan2VolumeMax
- quint16 <u>tankChan3VolumeMax</u>
- quint16 _tankChan0VolumeMaxHeightInMilimeter
- quint16 _tankChan1VolumeMaxHeightInMilimeter
- quint16 tankChan2VolumeMaxHeightInMilimeter
- quint16 _tankChan3VolumeMaxHeightInMilimeter
- GlobalEnumerate::E_TankLiquidInside _tankChan0LiquideInside
- GlobalEnumerate::E TankLiquidInside _tankChan1LiquideInside
- GlobalEnumerate::E TankLiquidInside tankChan2LiquideInside
- GlobalEnumerate::E_TankLiquidInside _tankChan3LiquideInside
- QList< quint16 > _filterListeChan0
- QList< quint16 > _filterListeChan1
- QList< quint16 > _filterListeChan2
- QList< quint16 > _filterListeChan3
- qint16 _chan0
- qint16 chan1
- · qint16 _chan2
- · qint16 _chan3
- GlobalEnumerate::E_StateMachine _stateMachine

5.2.1 Member Function Documentation

5.2.1.1 run()

```
void ADS1115Item::run ( ) [protected]
called function when the thread start
Returns
   void : nothing
```

The documentation for this class was generated from the following files:

- · SmartHomeDomotic/ADS1115/ads1115item.h
- SmartHomeDomotic/ADS1115/ads1115item.cpp

5.3 BME280 Class Reference

Public Member Functions

- BME280 (quint8 device I2C Adress)
- void init sbme280 calib data (psbme280 calib data pCalib data)
- void init_sbme280_uncomp_data (psbme280_uncomp_data pUncomp_data)
- void init_sbme280_data (psbme280_data pComp_data)
- void init sbme280 setting (psbme280 setting pBME280 setting)
- void init_sbme280_device (psbme280_dev pBME280_device)
- quint8 readChipID (int fd)
- quint8 readRegister (quint8 registerValue)
- void readCalibrationData (int fd, sbme280 calib data *data)
- void readUncompensatedValue (int fd, psbme280 uncomp data pUncomp data)
- void writBME280configuration (psbme280_dev pBME280_device)
- void wakeupDevice (psbme280_dev pBME280_device)
- float **getAltitude** (double pressure)
- quint8 getBME280_fd () const

Static Public Member Functions

• static double compensate_pressure (const sbme280_uncomp_data *uncomp_data, sbme280_calib_data *calib_data)

This internal API is used to compensate the raw pressure data and return the compensated pressure data in double data type.

static double compensate_temperature (const sbme280_uncomp_data *uncomp_data, sbme280_calib_data *calib data)

This internal API is used to compensate the raw temperature data and return the compensated temperature data in double data type.

• static double compensate_humidity (const sbme280_uncomp_data *uncomp_data, sbme280_calib_data *calib_data)

This internal API is used to compensate the raw humidity data and return the compensated humidity data in double data type.

Private Attributes

- quint8 _BME280_i2cAddress
- quint8 _BME280_fd

5.3.1 Member Function Documentation

5.3.1.1 compensate_humidity()

This internal API is used to compensate the raw humidity data and return the compensated humidity data in double data type.

Parameters

in	uncomp_data	: Contains the uncompensated humidity data.
in	calib_data	: Pointer to the calibration data ure.

Returns

Compensated humidity data.

Return values

Compensated	humidity data in double.
-------------	--------------------------

5.3.1.2 compensate_pressure()

This internal API is used to compensate the raw pressure data and return the compensated pressure data in double data type.

Parameters

in	uncomp_data	: Contains the uncompensated pressure data.
in	calib_data	: Pointer to the calibration data ure.

Returns

Compensated pressure data.

Return values

Compensated	pressure data in double.
-------------	--------------------------

5.3.1.3 compensate_temperature()

This internal API is used to compensate the raw temperature data and return the compensated temperature data in double data type.

Parameters

in	uncomp_data	: Contains the uncompensated temperature data.
in	calib_data	: Pointer to calibration data ure.

Returns

Compensated temperature data.

Return values

Compensated	temperature data in double.
,	•

The documentation for this class was generated from the following files:

- SmartHomeDomotic/BME280/bme280.h
- SmartHomeDomotic/BME280/bme280.cpp

5.4 BME280Item Class Reference

Inheritance diagram for BME280Item:

Collaboration diagram for BME280Item:

Signals

• void jumpToNextState ()

Public Member Functions

- **BME280Item** (quint8 deviceI2CAdress, QObject *bme280Display=nullptr, QObject *roomDataPlot=nullptr, QObject *homeViewer=nullptr)
- void readSavedData ()
- · bool onReadingData () const
- · bool deviceIsReady () const
- void setReadData (bool readData)
- DataFrame * dataFrame () const
- void setOnReadingData (bool onReadingData)
- void setStartToReadOnData (bool startToReadOnData)
- bool startToReadOnData () const

Protected Member Functions

• void run ()

called function when the thread start

Private Member Functions

- void initDevice ()
- void _insertTextAtHomePage (QString textToInsert)
- void _checkStateOfDevice ()
- void _initRegisterDevice ()
- bool _checkRegisterConfiguration ()
- void readDatal2C ()
- void _waitDelay (quint64 delayInSeconde)
- · void _waitDelayMili (quint64 delayInMiliSeconde)
- void _waitDelayMicro (quint64 delayInMicroSeconde)
- void _goToNextState ()

Private Attributes

- quint8 _devicel2CAdress
- quint8 _fd
- BME280 * _bme280
- sbme280 dev _bme280Device
- psbme280_dev _pbme280Device
- bool _deviceIsReady
- bool _onReadingData
- bool <u>startToReadOnData</u>
- QObject * _bme280Display
- QObject * _roomDataPlot
- QObject * _homeViewer
- DataFrame * _dataFrame
- double _temperature
- · double _humidity
- · double pressure
- GlobalEnumerate::E_StateMachine _stateMachine

5.4.1 Member Function Documentation

5.4.1.1 run()

```
void BME280Item::run ( ) [protected]
```

called function when the thread start

Returns

void: nothing

The documentation for this class was generated from the following files:

- · SmartHomeDomotic/BME280/bme280item.h
- SmartHomeDomotic/BME280/bme280item.cpp

5.5 CustomPlotItem Class Reference

Inheritance diagram for CustomPlotItem:

Collaboration diagram for CustomPlotItem:

Public Member Functions

- CustomPlotItem (QQuickItem *parent=nullptr, QObject *plotView=nullptr)
- void paint (QPainter *painter)
- Q_INVOKABLE void setupStyle (GlobalEnumerate::E_PlotStyle plotstyle, quint8 nbOfTrace)
- Q_INVOKABLE void setupGraphLabel (quint8 traceNumber, QString titleText)
- Q_INVOKABLE void **setupTraceIsSelected** (quint8 traceNumber, bool isVisible)
- Q INVOKABLE void addPoint (const int graphNumber, const double x, const double y)
- Q_INVOKABLE void **addYValue** (qreal valueGraph0, qreal valueGraph1, qreal valueGraph2, qreal valueGraph2, qreal valueGraph3=0, qreal valueGraph4=0, qreal valueGraph5=0, qreal settingTriggerValue=0, bool tickAsDate=true, quint8 tickNumber=0, bool isTheFirstData=false)
- Q INVOKABLE void clearGraphAndValues ()
- Q_INVOKABLE void replot (bool resize)
- Q_INVOKABLE void replotWithSavedData (quint16 year, quint8 month, quint8 day)
- Q_INVOKABLE void **setRange** (const quint64 &range)
- void setDrawRightToLeft (bool drawRightToLeft)
- void setNbPixels (const quint16 &nbPixels)
- void setSettingTriggerValue (const quint8 &settingTriggerValue)
- void setGraph0Label (const QString &graph0Label)
- void setGraph1Label (const QString &graph1Label)
- void setGraph2Label (const QString &graph2Label)
- void setGraph3Label (const QString &graph3Label)
- void setGraph4Label (const QString &graph4Label)
- void setGraph5Label (const QString &graph5Label)

Protected Member Functions

- void routeMouseEvents (QMouseEvent *event)
- virtual void mousePressEvent (QMouseEvent *event)
- virtual void mouseReleaseEvent (QMouseEvent *event)
- virtual void mouseMoveEvent (QMouseEvent *event)
- virtual void mouseDoubleClickEvent (QMouseEvent *event)

Private Slots

- void graphClicked (QCPAbstractPlottable *plottable)
- void onCustomReplot ()
- void updateCustomPlotSize ()
- void <u>recievedRefreshDataTemperaturePlot</u> ()
- void updatePlot ()

Private Member Functions

- void setupTraceWatherStation ()
- void setupTraceAnalogTrace (quint8 nbOfTrace)
- void setupTraceStatisticTrace (GlobalEnumerate::E_PlotStyle plotstyle)

Private Attributes

- · QDateTime dateTime
- QObject * _plotView
- QObject * _qobjectStatisticViewer
- QCustomPlot * _customPlot
- QCPGraph * _graph0
- QCPGraph * _graph1
- QCPGraph * _graph2
- QCPGraph * _graph3
- QCPGraph * _graph4
- QCPGraph * _graph5
- QCPBars * _bar0
- QCPBars * _bar1
- QCPBars * bar2
- QString graph0Label
- QString _graph1Label
- QString _graph2Label
- QString _graph3Label
- QString _graph4Label
- QString _graph5Label
- QCPItemStraightLine * line
- QColor _axisTickPlot
- quint8 _nbOfTrace
- · quint64 _nbPixels
- quint64 _range
- quint64 CPT
- double _CPTMin
- double _CPTMax
- · quint8 _yValue

- quint16 _yValueMin
- quint16 _yValueMax
- · qreal _settingTriggerValue
- · bool_plotWithYBorderGap
- · int objectInstance
- QColor traceSettingColor
- QVector< double > _YData
- QVector< double > _minusYData
- QVector< double > _XData
- QVector< int > _XDataInt
- QVector< int > _Y1DataInt
- QVector< int > Y2DataInt
- GlobalEnumerate::E PlotStyle myPlotStyle
- $\bullet \quad \mathsf{QSharedPointer} < \mathsf{QCPGraphDataContainer} > \underline{\quad} \mathsf{arrayPlotContainerPointerGraph0}$
- QSharedPointer< QCPGraphDataContainer > _arrayPlotContainerPointerGraph1
- QSharedPointer< QCPGraphDataContainer > _arrayPlotContainerPointerGraph2
- QSharedPointer< QCPGraphDataContainer > _arrayPlotContainerPointerGraph3
- QSharedPointer< QCPGraphDataContainer > _arrayPlotContainerPointerGraph4
- QSharedPointer< QCPGraphDataContainer > _arrayPlotContainerPointerGraph5
- QCPGraphDataContainer::const_iterator_itBegin
- QCPGraphDataContainer::const_iterator_itEnd

The documentation for this class was generated from the following files:

- · SmartHomeDomotic/customplotitem.h
- SmartHomeDomotic/customplotitem.cpp

5.6 DataAnalyser Class Reference

Inheritance diagram for DataAnalyser:

Collaboration diagram for DataAnalyser:

Public Slots

void ReceivedreplotWithSavedData (int year, int month, int day)

Public Member Functions

- DataAnalyser (quint16 nbDataFramToTempSave, QObject *statisticValueViewer, QObject *statisticViewer)
- void saveDataFile ()
- void setBuffer (QVector < DataFrame > *buffer)
- void saveTempData (DataFrame *dataFrame)
- void setSaveTempFile (bool saveTempFile)
- void setSaveFile (bool saveFile)
- void setDataFrame (DataFrame *dataFrame)
- void setItdataFrameEnd (const QVector < DataFrame >::iterator &itdataFrameEnd)
- void setNbOfSavedDataInBuffer (const quint16 &nbOfSavedDataInBuffer)
- void setResetTempFile (bool resetTempFile)
- · bool saveFinished () const
- void setDateTime (const QDateTime &dateTime)
- bool saveTempFileFinished () const
- bool saveFileFinished () const

Static Public Member Functions

static void msleep (unsigned long msecs)
 waiting delay

Protected Member Functions

• void run ()

called function when the thread start

Private Member Functions

- void _updateDataForTheHour (quint8 minuteToUpdate)
- void <u>updateDataForTheDay</u> (QDateTime *dateToUpdate)
- void **_updateDataForTheMonth** (QDateTime *dateToUpdate)
- void _createDirectory (QDateTime *dateTimeToCheck)

Private Attributes

- QVector < DataFrame > * _buffer
- QVector < DataFrame >::iterator _itdataFrameEnd
- quint16 nbOfSavedDataInBuffer
- QList < DataFrame > _bufferTempData
- QFile _fileTempData
- quint16 _nbDataFramToTempSave
- bool _saveTempFile
- bool _saveTempFileFinished
- bool _saveFile
- bool saveFileFinished
- bool resetTempFile
- bool updateDayData
- bool <u>updateMonthData</u>
- bool_saveFinished
- DataFrame * _dataFrame
- QString _directoryDataMain
- QString _directoryFileNameYear
- QString _directoryFileNameMonth
- QString _directoryFileNameDay
- QString _directoryFileNameHour
- QString _directoryFileNameMinute
- quint16 _waitDelayInMili
- QDateTime _dateTime
- double _tempMin
- double tempMax
- double _humMin
- · double _humMax
- · double _pressMin
- double _pressMax
- qint16 _consoChan0
- · qint16 consoChan1
- qint16 _consoChan2
- qint16 _consoChan3
- QObject * _qobjectStastisticValueViewer
- QObject * _statisticViewer

5.6.1 Member Function Documentation

5.6.1.1 msleep()

```
static void DataAnalyser::msleep ( unsigned\ long\ \textit{msecs}\ ) \quad [static]
```

waiting delay

Parameters

in	msleep	is the time in miliseconds
----	--------	----------------------------

Returns

void: nothing

Here is the caller graph for this function:

5.6.1.2 run()

```
void DataAnalyser::run ( ) [protected]
```

called function when the thread start

Returns

void: nothing

Here is the call graph for this function:

The documentation for this class was generated from the following files:

- SmartHomeDomotic/DataManager/dataanalyser.h
- SmartHomeDomotic/DataManager/dataanalyser.cpp

5.7 DataFrame Class Reference

Public Member Functions

• DataFrame ()

constructor for DataFrame

• quint8 msbCPT () const

Getter for msbCPT attribute.

void setMsbCPT (const quint8 &msbCPT)

Setter for msbCPT attribute.

• double BME280_temperature () const

Getter for BME280_temperature attribute.

• void setBME280_temperature (double BME280_temperature)

Setter for BME280_temperature attribute.

• double BME280_humidity () const

Getter for BME280_humidity attribute.

void setBME280_humidity (double BME280_humidity)

Setter for BME280_humidity attribute.

• double BME280_pressure () const

Getter for BME280_pressure attribute.

void setBME280 pressure (double BME280 pressure)

Setter for BME280_pressure attribute.

• qint16 ADS115 1 chan0 () const

Getter for ADS115 1 chan0 attribute.

void setADS115_1_chan0 (const qint16 &ADS115_1_chan0)

Setter for ADS115_1_chan0 attribute.

qint16 ADS115_1_chan1 () const

Getter for ADS115_1_chan1 attribute.

void setADS115_1_chan1 (const qint16 &ADS115_1_chan1)

Setter for ADS115_1_chan1 attribute.

qint16 ADS115_1_chan2 () const

Getter for ADS115_1_chan2 attribute.

void setADS115 1 chan2 (const gint16 &ADS115 1 chan2)

Setter for ADS115_1_chan2 attribute.

• qint16 ADS115_1_chan3 () const

Getter for ADS115_1_chan3 attribute.

void setADS115 1 chan3 (const gint16 &setADS115 1 chan3)

Setter for setADS115_1_chan3 attribute.

• qint16 ADS115_2_chan0 () const

Getter for ADS115_2_chan0 attribute.

void setADS115_2_chan0 (const qint16 &ADS115_2_chan0)

Setter for ADS115_2_chan0 attribute.

qint16 ADS115_2_chan1 () const

Getter for ADS115_2_chan1 attribute.

void setADS115_2_chan1 (const qint16 &ADS115_2_chan1)

Setter for ADS115 2 chan1 attribute.

qint16 ADS115_2_chan2 () const

Getter for ADS115_2_chan2 attribute.

void setADS115_2_chan2 (const qint16 &ADS115_2_chan2)

Setter for ADS115_2_chan2 attribute.

• qint16 ADS115_2_chan3 () const

Getter for ADS115_2_chan3 attribute.

void setADS115_2_chan3 (const qint16 &ADS115_2_chan3)

Setter for ADS115_2_chan3 attribute.

Private Attributes

- double _BME280_temperature
- double _BME280_humidity
- double _BME280_pressure
- qint16 _ADS115_1_chan0
- qint16 _ADS115_1_chan1
- qint16 _ADS115_1_chan2
- qint16 _ADS115_1_chan3
- qint16 _ADS115_2_chan0
- qint16 _ADS115_2_chan1
- qint16 _ADS115_2_chan2
- qint16 _ADS115_2_chan3

5.7.1 Member Function Documentation

5.7.1.1 ADS115_1_chan0()

```
qint16 DataFrame::ADS115_1_chan0 ( ) const
```

Getter for ADS115_1_chan0 attribute.

Returns

ADS115_1_chan0: qint16

Here is the caller graph for this function:

5.7.1.2 ADS115_1_chan1()

```
qint16 DataFrame::ADS115_1_chan1 ( ) const
```

Getter for ADS115_1_chan1 attribute.

Returns

ADS115_1_chan1: qint16

Here is the caller graph for this function:

5.7.1.3 ADS115_1_chan2()

```
qint16 DataFrame::ADS115_1_chan2 ( ) const
```

Getter for ADS115_1_chan2 attribute.

Returns

ADS115_1_chan2: qint16

Here is the caller graph for this function:

5.7.1.4 ADS115_1_chan3()

```
qint16 DataFrame::ADS115_1_chan3 ( ) const
```

Getter for ADS115_1_chan3 attribute.

Returns

```
ADS115_1_chan3: qint16
```

Here is the caller graph for this function:

5.7.1.5 ADS115_2_chan0()

```
qint16 DataFrame::ADS115_2_chan0 ( ) const
```

Getter for ADS115_2_chan0 attribute.

Returns

```
ADS115_2_chan0: qint16
```

Here is the caller graph for this function:

5.7.1.6 ADS115_2_chan1()

```
qint16 DataFrame::ADS115_2_chan1 ( ) const
```

Getter for ADS115_2_chan1 attribute.

Returns

ADS115_2_chan1: qint16

Here is the caller graph for this function:

5.7.1.7 ADS115_2_chan2()

```
qint16 DataFrame::ADS115_2_chan2 ( ) const
```

Getter for ADS115_2_chan2 attribute.

Returns

ADS115_2_chan2 : qint16

Here is the caller graph for this function:

5.7.1.8 ADS115_2_chan3()

```
qint16 DataFrame::ADS115_2_chan3 ( ) const
```

Getter for ADS115_2_chan3 attribute.

Returns

ADS115_2_chan3: qint16

Here is the caller graph for this function:

5.7.1.9 BME280_humidity()

```
double DataFrame::BME280_humidity ( ) const
```

Getter for BME280_humidity attribute.

Returns

BME280_humidity: double

Here is the caller graph for this function:

5.7.1.10 BME280_pressure()

```
double DataFrame::BME280_pressure ( ) const
```

Getter for BME280_pressure attribute.

Returns

BME280_pressure : double

Here is the caller graph for this function:

5.7.1.11 BME280_temperature()

```
double DataFrame::BME280_temperature ( ) const
```

Getter for BME280_temperature attribute.

Returns

BME280_temperature : double

Here is the caller graph for this function:

5.7.1.12 msbCPT()

```
quint8 DataFrame::msbCPT ( ) const
```

Getter for msbCPT attribute.

Returns

msbCPT: quint8

5.7.1.13 setADS115_1_chan0()

Setter for ADS115_1_chan0 attribute.

Parameters

in	ADS115 1 chan0	is volume value on channel 0 of ADS1115 1.

Returns

void: nothing

Here is the call graph for this function:

5.7.1.14 setADS115_1_chan1()

Setter for ADS115_1_chan1 attribute.

Parameters

in	ADS115 1 chan1	is volume value on channel 1 of ADS1115 1.

Returns

void: nothing

Here is the call graph for this function:

5.7.1.15 setADS115_1_chan2()

Setter for ADS115_1_chan2 attribute.

Parameters

ı	in	ADS115 1 chan2	is volume value on channel 2 of ADS1115 1.
		/ IDO / IO_ I_O/IA/IE	10 volumo valdo em emarmo 2 em 180 mmo_m

Returns

void : nothing

Here is the call graph for this function:

5.7.1.16 setADS115_1_chan3()

Setter for setADS115_1_chan3 attribute.

Parameters

in	setADS115_1_chan3	is volume value on channel 3 of ADS1115_1.
----	-------------------	--

Returns

void: nothing

Here is the call graph for this function:

5.7.1.17 setADS115_2_chan0()

Setter for ADS115_2_chan0 attribute.

Parameters

I	in	ADS115 1 chan0	is volume value on channel 0. of ADS1115 2.

Returns

void: nothing

Here is the call graph for this function:

5.7.1.18 setADS115_2_chan1()

Setter for ADS115_2_chan1 attribute.

Parameters

in	ADS115 2 chan1	is volume value on channel 1. of ADS1115 2.
----	----------------	---

Returns

void: nothing

Here is the call graph for this function:

5.7.1.19 setADS115_2_chan2()

Setter for ADS115_2_chan2 attribute.

Parameters

in	ADS115_2_chan2	is volume value on channel 2. of ADS1115_2.
----	----------------	---

Returns

void: nothing

Here is the call graph for this function:

5.7.1.20 setADS115_2_chan3()

Setter for ADS115_2_chan3 attribute.

Parameters

in	ADS115 2 chan3	is volume value on channel 2 of ADS1115 2.

Returns

void: nothing

Here is the call graph for this function:

5.7.1.21 setBME280_humidity()

Setter for BME280_humidity attribute.

Parameters

in	BME280_humidity	is room relative humidity.
----	-----------------	----------------------------

Returns

void: nothing

Here is the call graph for this function:

5.7.1.22 setBME280_pressure()

Setter for BME280_pressure attribute.

Parameters

in	BME280_pressure	is atospheric pressure.	1
----	-----------------	-------------------------	---

Returns

void: nothing

Here is the call graph for this function:

5.7.1.23 setBME280_temperature()

Setter for BME280_temperature attribute.

Parameters

in	BME280_temperature	is room temperature .
----	--------------------	-----------------------

Returns

void: nothing

Here is the call graph for this function:

5.7.1.24 setMsbCPT()

Setter for msbCPT attribute.

Parameters

in	msbCPT	is highest byte counter .
----	--------	---------------------------

Returns

void: nothing

The documentation for this class was generated from the following files:

- SmartHomeDomotic/DataManager/dataFrame.h
- SmartHomeDomotic/DataManager/dataFrame.cpp

5.8 DataManager Class Reference

Inheritance diagram for DataManager:

Collaboration diagram for DataManager:

Public Slots

void ReceivedreplotWithSavedData (int year, int month, int day)

Signals

void dataFrameWasSent (int itProducerAdress)

Public Member Functions

DataManager (QObject *stastisticViewer, QObject *bme280Display, QString name, quint32 nbFrame
 ReadForEverySavedFile, quint16 delayInMili, QObject *statisticValueViewer, DataAnalyser *dataAnalyser
 Object=nullptr)

constructor for DataFrameLiveReading

· void startReading ()

start reading operation

- void stopReading ()
- ADS1115Item * ADS1115_1 () const

Getter of the ADS1115_1.

void setADS1115_1 (ADS1115Item *ADS1115_1)

Getter for ADS1115_1 attribute.

ADS1115Item * ADS1115_2 () const

Getter of the ADS1115_1.

void setADS1115_2 (ADS1115Item *ADS1115_2)

Getter for ADS1115_2 attribute.

• BME280Item * BME280 () const

Getter of the BME280.

void setBME280 (BME280Item *BME280)

Getter for BME280 attribute.

- void **setDelay** (const quint16 &delay)
- void setDirectoryDatafileName (const QString &directoryDatafileName)
- QString directoryDatafileName () const

Static Public Member Functions

static void msleep (unsigned long msecs)
 waiting delay

Protected Member Functions

• void run ()

called function when the thread start

Private Member Functions

- void _waitDelay (int delayInSeconde)
- void _waitDelayMili (quint64 delayInMiliSeconde)

Private Attributes

- QObject * _stastisticViewer
- QObject * _bme280Display
- quint16 _delay
- bool _askForStartReading
- bool _askForStopReading
- ADS1115Item * _ADS1115_1
- ADS1115Item * _ADS1115_2
- BME280Item * _BME280
- QVector< DataFrame > _buffer1
- QVector < DataFrame >::iterator _itdataFrameBuffer1
- QVector< DataFrame > _buffer2
- QVector < DataFrame >::iterator _itdataFrameBuffer2
- quint32 _nbFrameReadForEverySavedFile
- QDateTime _dateTime
- DataAnalyser * _dataAnalyerObject
- QString _time_format
- QString _directoryDatafileName

5.8.1 Constructor & Destructor Documentation

5.8.1.1 DataManager()

constructor for DataFrameLiveReading

Parameters

in name		is the name of the object
in	nbFrameReadForEverySavedFile	is the amont of reading data saved per file
in	delay	is the cycle time delay in miliseconds

5.8.2 Member Function Documentation

```
5.8.2.1 ADS1115_1()
```

```
ADS1115Item * DataManager::ADS1115_1 ( ) const
```

Getter of the ADS1115_1.

Returns

```
ADS1115_1: ADS1115_1 object pointer
```

Here is the caller graph for this function:

5.8.2.2 ADS1115_2()

```
ADS1115Item * DataManager::ADS1115_2 ( ) const
```

Getter of the ADS1115_1.

Returns

```
ADS1115_2: ADS1115_2 object pointer
```

Here is the caller graph for this function:

5.8.2.3 BME280()

```
BME280Item * DataManager::BME280 ( ) const
```

Getter of the BME280.

Returns

BME280: BME280 object pointer

Here is the caller graph for this function:

5.8.2.4 msleep()

```
static void DataManager::msleep (
          unsigned long msecs ) [static]
```

waiting delay

Parameters

in <i>msleep</i>	is the time in miliseconds
------------------	----------------------------

Returns

void: nothing

Here is the caller graph for this function:

5.8.2.5 run()

```
void DataManager::run ( ) [protected]
```

called function when the thread start

Returns

void: nothing

Here is the call graph for this function:

5.8.2.6 setADS1115_1()

Getter for ADS1115_1 attribute.

Returns

void: nothing

Here is the call graph for this function:

5.8.2.7 setADS1115_2()

Getter for ADS1115_2 attribute.

Returns

void: nothing

Here is the call graph for this function:

5.8.2.8 setBME280()

Getter for BME280 attribute.

Returns

void: nothing

Here is the call graph for this function:

5.8.2.9 startReading()

```
DataManager::startReading ( )
```

start reading operation

Returns

void: nothing

The documentation for this class was generated from the following files:

- SmartHomeDomotic/DataManager/datamanager.h
- SmartHomeDomotic/DataManager/datamanager.cpp

5.9 E_PlotStyle Struct Reference

liste of the different mode of the plots

```
#include <globalenumerate.h>
```

5.9.1 Detailed Description

liste of the different mode of the plots

Is use to set trace shape and limite for warning

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

SmartHomeDomotic/globalenumerate.h

5.10 E_TankLiquidInside Struct Reference

liste of the product can be fill

#include <globalenumerate.h>

5.10.1 Detailed Description

liste of the product can be fill

Is use to set the color of the tank level and the liquide density

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

· SmartHomeDomotic/globalenumerate.h

5.11 E_TankLiquidInside Struct Reference

liste of the product can be fill

#include <globalenumerate.h>

5.11.1 Detailed Description

liste of the product can be fill

Is use to set the color of the tank level and the liquide density

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

· SmartHomeDomotic/globalenumerate.h

5.12 E_TankObjectName Struct Reference

structure of all tank possible

#include <globalenumerate.h>

5.12.1 Detailed Description

structure of all tank possible

Use to manage the link between the custom name and the object

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

SmartHomeDomotic/globalenumerate.h

5.13 E TankObjectName Struct Reference

structure of all tank possible

#include <globalenumerate.h>

5.13.1 Detailed Description

structure of all tank possible

Use to manage the link between the custom name and the object

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

· SmartHomeDomotic/globalenumerate.h

5.14 E_TankObjectName Struct Reference

structure of all tank possible

#include <globalenumerate.h>

5.14.1 Detailed Description

structure of all tank possible

Use to manage the link between the custom name and the object

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

· SmartHomeDomotic/globalenumerate.h

5.15 E_TankObjectName Struct Reference

structure of all tank possible

#include <globalenumerate.h>

5.15.1 Detailed Description

structure of all tank possible

Use to manage the link between the custom name and the object

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

• SmartHomeDomotic/globalenumerate.h

5.16 eBPStartStopState Struct Reference

structure of the main button state

#include <globalEnumatedAndExtern.h>

5.16.1 Detailed Description

structure of the main button state

Is for the text display in on the main push button / typedef enum { stop, /*!< Stop display*/ start, /*!< Start display*/ hold /*!< Hold display*/ }eBPStartStopState;

QString BPStartStopStateStartTxt; QString BPStartStopStateStopTxt; QString BPStartStopStateHoldTxt;

//Error Possible // from the Highest priority is at the top after noError /**

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

• SmartHomeDomotic/globalEnumatedAndExtern.h

5.17 eEdge Struct Reference

structure of all possible edge possible

#include <globalEnumatedAndExtern.h>

5.17.1 Detailed Description

structure of all possible edge possible

Can be selected in trigger setting window / typedef enum { noEdge = 0, /*! < no edge / fallingEdge, ! < falling edge / risingEdge ! < rising edge */ }eEdge;

//Equation operator possible /**

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

 $\bullet \ SmartHomeDomotic/globalEnumatedAndExtern.h$

5.18 eError Struct Reference

structure of all error possible

#include <globalenumerate.h>

5.18.1 Detailed Description

structure of all error possible

The Highest priority message will be displaying and it's at the top after no Error

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

· SmartHomeDomotic/globalenumerate.h

5.19 eError Struct Reference

structure of all error possible

#include <globalenumerate.h>

5.19.1 Detailed Description

structure of all error possible

The Highest priority message will be displaying and it's at the top after no Error

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

· SmartHomeDomotic/globalenumerate.h

5.20 eFTDIReturnCharacter Struct Reference

structure of return character possible from the PIC

#include <globalEnumatedAndExtern.h>

5.20.1 Detailed Description

structure of return character possible from the PIC

Use to converte the character to string for displaying / typedef enum { endOfTransmission = 0x04, /*!< 0x04 end of transmission / transmissionEnquiry = 0x05, /!< 0x05 start of transmission / positiveAcknoledge = 0x06, /!< 0x06 acknoledgement / negativeAcknoledge = 0x15 /!< 0x015 none acknoledgement */ }eFTDIReturnCharacter;

//all static variables static QMap<int, QString> TriggerTracePossible; static QMap<int, QString> FTDIReturn← CharPossible; static QMap<int, QString> FTDIStatePossible;

//init array for external use static QMap<int, QString> initTriggerTracePossible(); static QMap<int, QString> initFTDIReturnCharPossibleTxt(); static QMap<int, QString> initFTDIStatePossibleTXT();

static QMap<int, double> initPeridePossible(); static QMap<int, QString> initPeridePossibleTxt();

static QMap<int, QString> initMainStateDisplayPossibleTxt();

new declaration

liquide insiade the tank /**

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

SmartHomeDomotic/globalEnumatedAndExtern.h

5.21 eFTDIStatePossible Struct Reference

structure of all FTDI state possible

#include <globalEnumatedAndExtern.h>

5.21.1 Detailed Description

structure of all FTDI state possible

Use to display the status as message and check the FTDI status / typedef enum { FTDInotConnected = 0, /*!< FTDI not connected / FTDIDeviceFound, /!< FTDI not found / FTDIopened, /!< FTDI not opened / FTDIUSBparameter \leftarrow Setted, /!< FTDI USB parameter setting was failed / FTDIBaudRateSetted, /!< FTDI baudrate parameter setting was failed / FTDIDataCaracteristiqueSetted, /!< FTDI data characteristic setting was failed / FTDIFlowControl was failed / FTDI flow control setting was failed / FTDITxRxBufferFree, /!< FTDI Rx and Tx buffer cleaned was failed / FTDIready /!< FTDI ready to use */ }eFTDIStatePossible;

/**

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

• SmartHomeDomotic/globalEnumatedAndExtern.h

5.22 eLogicOperator Struct Reference

structure of all logical operator possible

#include <globalEnumatedAndExtern.h>

5.22.1 Detailed Description

structure of all logical operator possible

Can be selected in trigger function window / typedef enum { opNone = 0, /*!< no operator / opAnd, /!< logical operator AND / opOr, /!< logical operator OR / opAndNot, /!< logical operator AND NOT / opOrNot /!< logical operator OR NOT */ elogicOperator;

QString opNoneTxt; QString opOrTxt; QString opAndTxt; QString opNotOrTxt; QString opNoTAnd;

//button in setting windows /**

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

 $\bullet \ SmartHomeDomotic/globalEnumatedAndExtern.h$

5.23 eMainStateApplication Struct Reference

structure of the main application states

#include <globalEnumatedAndExtern.h>

5.23.1 Detailed Description

structure of the main application states

```
\fn GlobalEnumatedAndExtern();
\brief constructor for GlobalEnumatedAndExtern
‍/
```

GlobalEnumatedAndExtern();

//application main state possible /**

Is for the main state graph / typedef enum { mainStateInit = 0, /*!< initialisation status / mainStateStop, Λ < stop status / mainStateReady, Λ < ready status / mainStateSet, Λ < set status / mainStateTrig, Λ < trig status / mainStateRoll, Λ < roll status / mainStateDebug Λ < debug status */ }eMainStateApplication;

//application trig state possible /**

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

SmartHomeDomotic/globalEnumatedAndExtern.h

5.24 eMainStateDisplay Struct Reference

structure of the display status possible

```
#include <globalEnumatedAndExtern.h>
```

5.24.1 Detailed Description

structure of the display status possible

Is for the status display / typedef enum { init = 0, /*!< Init display*/ stopped, /*!< Stopped display*/ ready, /*!< Ready display*/ runTrig, /*!< Run trig display*/ trigged, /*!< Trigged display*/ rollOn, /*!< Roll on display*/ paused /*!< Paused display*/ }eMainStateDisplay;

QString BPMenuHomeTxt; QString BPMenuSetTxt; QString BPMenuTrigTxt; QString BPMenuRollTxt; QString B← PMenuDebugTxt;

//startStop button state possible /**

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

SmartHomeDomotic/globalEnumatedAndExtern.h

5.25 ePeriodePossible Struct Reference

structure of all periode possible

#include <globalEnumatedAndExtern.h>

5.25.1 Detailed Description

structure of all periode possible

Can be selected in Time scale factor window / typedef enum { periode0_5_microsec = 0, /*!< 0,5 microseconds / periode1_microsec, Λ < 1 microseconds / periode50_microsec, Λ < 50 microseconds / periode100_microsec, Λ < 100 microseconds / periode1_ms, Λ < 1 miliseconds / periode5_ms, Λ < 5 miliseconds / periode10_ms, Λ < 10 miliseconds / periode50_ms, Λ < 50 miliseconds / periode100_ms, Λ < 100 miliseconds / periode500_ms, Λ < 500 miliseconds / periode1_s, Λ < 1 second / periode5_s, Λ < 5 second / periode10_s Λ < 10 second */ }ePeriodePossible;

//FTDI state possible /**

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

SmartHomeDomotic/globalEnumatedAndExtern.h

5.26 eRangeValue Struct Reference

structure of all voltage range possible

#include <globalEnumatedAndExtern.h>

5.26.1 Detailed Description

structure of all voltage range possible

This is the possible range for the signal / typedef enum { range0_24 = 0, /*!< range 0 to $24Vdc / range0_30$, /!< range 0 to $40Vdc / range15_15$ /!< range -15Vdc to 15Vdc */ PeRangeValue;

QString range0_24Txt; QString range0_30Txt; QString range15_15Txt;

//edge type /**

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

 $\bullet \ SmartHomeDomotic/globalEnumatedAndExtern.h$

5.27 eRollState Struct Reference

structure of the roll states

#include <globalEnumatedAndExtern.h>

5.27.1 Detailed Description

structure of the roll states

Is for the roll state graph / typedef enum { rollNotReady = 0, /*!< not ready status*/ rollReady, /*!< ready status*/ rollReady, /*!< ready status*/ }eRollState;

//display state possible /**

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

• SmartHomeDomotic/globalEnumatedAndExtern.h

5.28 ErrorManager Class Reference

Inheritance diagram for ErrorManager:

Collaboration diagram for ErrorManager:

Public Member Functions

• ErrorManager (QWidget *parent=nullptr, QObject *objectDisplayMessage=nullptr)

Private Slots

• void _reveived_Error (QString objectName, QString objectTitle, int errorNumber, bool active)

Private Member Functions

void <u>setColor</u> (bool inTrouble)

Use to change the color of the message display. Red in case of errors messages, grey no error message at all.

- bool _checkMessageAllreadyExiste (ErrorMessage *errorMessage)
- int **findIdToRemove** (ErrorMessage *errorMessage)
- void displayMessage ()

Use to display the message in the dedicated frame.

Private Attributes

- QObject * _objectDisplayMessage
- ErrorMessage * _errorMessage
- QMap< int, QString > _errorListPossible
- QMap < int, ErrorMessage * > _errorListNow

5.28.1 Member Function Documentation

5.28.1.1 _displayMessage()

```
void ErrorManager::_displayMessage ( ) [private]
```

Use to display the message in the dedicated frame.

Returns

void: nothing

5.28.1.2 _setColor()

Use to change the color of the message display. Red in case of errors messages, grey no error message at all.

Parameters

in	inTrouble	is the status of the message
----	-----------	------------------------------

Returns

void: nothing

The documentation for this class was generated from the following files:

- SmartHomeDomotic/errormanager.h
- SmartHomeDomotic/errormanager.cpp

5.29 ErrorMessage Class Reference

Inheritance diagram for ErrorMessage:

 $Collaboration\ diagram\ for\ Error Message:$

Public Member Functions

- ErrorMessage (QObject *parent=nullptr)
- QString **objectName** () const
- void setObjectName (const QString &objectName)
- QString objectTitle () const
- void **setObjectTitle** (const QString &objectTitle)
- int errorNumber () const
- void setErrorNumber (int errorNumber)
- · bool active () const
- void setActive (bool active)

Private Attributes

- · QString _objectName
- QString _objectTitle
- int <u>errorNumber</u>
- · bool_active

The documentation for this class was generated from the following files:

- · SmartHomeDomotic/errormessage.h
- · SmartHomeDomotic/errormessage.cpp

5.30 eTracePossible Struct Reference

structure of all trace possible

#include <globalEnumatedAndExtern.h>

5.30.1 Detailed Description

structure of all trace possible

Can be selected in channels setting window / typedef enum { btNone = 0, /*!< no trace / btDl1, Λ < trace DI1 / btDl2, Λ < trace DI2 / btDl3, Λ < trace DI3 / btDl4, Λ < trace DI4 / btDl5, Λ < trace DI5 / btDl6, Λ < trace DI6 / btDl7, Λ < trace DI7 / btDl8, Λ < trace DI8 / btDl9, Λ < trace DI9 / btDl10, Λ < trace DI10 / btDl11, Λ < trace DI11 / btDl12, Λ < trace DI12 / btDl13, Λ < trace DI13 / btDl14, Λ < trace DI14 / btDl15, Λ < trace DI15 / btDl16, Λ < trace DI16 / btAl1, Λ < trace AI1 / btAl2, Λ < trace AI2 / btAl3, Λ < trace AI3 / btAl4, Λ < trace AI4 / functionResult Λ < trigger trace TR1*/}eTracePossible;

//periode possible for saved time /**

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

• SmartHomeDomotic/globalEnumatedAndExtern.h

5.31 eTrigState Struct Reference

structure of the trigger states

#include <globalEnumatedAndExtern.h>

5.31.1 Detailed Description

structure of the trigger states

Is for the trigger state graph / typedef enum { trigNotReady = 0, /*!< not ready status*/ trigReady, /*!< ready status*/ trigRunTrig, /*!< run trig status*/ trigTrigged, /*!< trigged status*/ }eTrigState;

//application Roll state possible /**

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

• SmartHomeDomotic/globalEnumatedAndExtern.h

5.32 GlobalEnumatedAndExtern Class Reference

Inheritance diagram for GlobalEnumatedAndExtern:

Collaboration diagram for GlobalEnumatedAndExtern:

Public Types

```
    enum E_TankObjectName {
        TANK1 = 1, TANK2, TANK3, TANK4,
        TANK5, TANK6 }
```

5.32.1 Member Enumeration Documentation

5.32.1.1 E_TankObjectName

enum GlobalEnumatedAndExtern::E_TankObjectName

Enumerator

TANK1	tank on the 1 row 1 column
TANK2	tank on the 1 row 2 column
TANK3	tank on the 1 row 3 column
TANK4	tank on the 2 row 1 column
TANK5	tank on the 2 row 2 column
TANK6	tank on the 2 row 3 column

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

• SmartHomeDomotic/globalEnumatedAndExtern.h

5.33 GlobalEnumerate Class Reference

Inheritance diagram for GlobalEnumerate:

Collaboration diagram for GlobalEnumerate:

Public Types

```
    enum E_PlotStyle {
        PLOT_STYLE_WEATHER_STATION = 0, PLOT_STYLE_ANANLOG_TRACE, PLOT_STYLE_STATISTIC_TRACE,
        PLOT_STYLE_TEMPERATURE_TRACE,
        PLOT_STYLE_HUMIDITY_TRACE, PLOT_STYLE_PRESSURE_TRACE, PLOT_STYLE_CONSO_TRACE
    }
```

```
enum E_TankLiquidInside { WATER = 0, OIL, ECO_OIL }
enum E_TankObjectName {
    TANK1 = 1, TANK2, TANK3, TANK4,
    TANK5, TANK6 }
enum E_HomePageObject {
    HOMEBME280 = 0, HOMETANK1, HOMETANK2, HOMETANK3,
    HOMETANK4, HOMETANK5, HOMETANK6, HOMESENSOR1,
    HOMESENSOR2, HOMESENSOR3, HOMESENSOR4, HOMESENSOR5,
    HOMESENSOR6, HOMEAD1115_1, HOMEAD1115_2 }
enum E_ErrorMesseage { ERR_NO_ERROR, ERR_LOW_LEVEL_REACHED }
enum E_StateMachine {
    STATE_NOT_FOUNDED = 0, STATE_FOUNDED, STATE_INIT, STATE_ON_READING,
    STATE_READY }
```

Static Public Member Functions

• static void initClass ()

5.33.1 Member Enumeration Documentation

5.33.1.1 E_ErrorMesseage

enum GlobalEnumerate::E_ErrorMesseage

Enumerator

ERR_NO_ERROR	no Error
ERR_LOW_LEVEL_REACHED	on of the tank reach the low level warning

5.33.1.2 E_HomePageObject

enum GlobalEnumerate::E_HomePageObject

Enumerator

HOMEBME280	BME280 object
HOMETANK1	Tank 1 object
HOMETANK2	Tank 2 object
HOMETANK3	Tank 3 object
HOMETANK4	Tank 4 object
HOMETANK5	Tank 5 object
HOMETANK6	Tank 6 object
HOMESENSOR1	Sensor 1 object
HOMESENSOR2	Sensor 2 object

Enumerator

HOMESENSOR3	Sensor 3 object
HOMESENSOR4	Sensor 4 object
HOMESENSOR5	Sensor 5 object
HOMESENSOR6	Sensor 6 object
HOMEAD1115↔	converter AD1115 number 1 object
_1	
HOMEAD1115↔	converter AD1115 number 2 object
_2	

5.33.1.3 E_PlotStyle

enum GlobalEnumerate::E_PlotStyle

Enumerator

PLOT_STYLE_WEATHER_STATION	weather station style, 1x temp, 1x humidity, 1x pressur and 1x
	horizontal limite line
PLOT_STYLE_ANANLOG_TRACE	line traces, 6x traces and 1x horizontal limite line
PLOT_STYLE_STATISTIC_TRACE	line traces, 6x traces and 1x horizontal limite line
PLOT_STYLE_TEMPERATURE_TRACE	line traces, 2x traces and 1x horizontal limite line
PLOT_STYLE_HUMIDITY_TRACE	line traces, 2x traces and 1x horizontal limite line
PLOT_STYLE_PRESSURE_TRACE	line traces, 2x traces and 1x horizontal limite line
PLOT_STYLE_CONSO_TRACE	line traces, 2x traces and 1x horizontal limite line

5.33.1.4 E_StateMachine

enum GlobalEnumerate::E_StateMachine

Enumerator

STATE_NOT_FOUNDED	state not founded
STATE_FOUNDED	state founded
STATE_INIT	state in init
STATE_ON_READING	state on reading
STATE_READY	state ready to use

5.33.1.5 E_TankLiquidInside

 $\verb"enum GlobalEnumerate": E_TankLiquidInside"$

Enumerator

WATER	water inside tank
OIL	oil inside tank
	ecoOil inside tank
ECO_OIL	

5.33.1.6 E_TankObjectName

enum GlobalEnumerate::E_TankObjectName

Enumerator

TANK1	tank on the 1 row 1 column
TANK2	tank on the 1 row 2 column
TANK3	tank on the 1 row 3 column
TANK4	tank on the 2 row 1 column
TANK5	tank on the 2 row 2 column
TANK6	tank on the 2 row 3 column

The documentation for this class was generated from the following files:

- SmartHomeDomotic/globalenumerate.h
- SmartHomeDomotic/globalenumerate.cpp

5.34 GlobaleStaticValue Class Reference

Static Public Member Functions

- static QMap < int, QString > initTankObjectName ()
 init the array for all tank object name possible
- static QMap< int, QString > initErrorPossible ()

init the array for all possible error on application

static QMap< int, QString > initHomeViewObject ()

init the array for all home view abject

init the array for all home view object

Static Public Attributes

- static QString welcomeText
- static QString errorCounterTxt = "nb of active error"
- static quint16 delaiToReadValue = 10000
- static QString saveGroupeNameApplicationSettingTxt = "APP_SETTING"
- static QString ADS115_5V_ValueInPlus = "ADS115_5V_InPlus"
- static QString saveIDTxt = "ID"
- static QString saveObjectNameTxt = "ObjectName"

- static QString saveTitleTxt = "Title"
- static QString saveVisibleTxt = "Visible"
- static QString saveLiquideInsideTxt = "LiquideInside"
- static QString saveVolumeMaxTxt = "VolumeMax"
- static QString saveLowLevelWarningTxt = "LowLevelWarning"
- static QString saveHeightVMaxValueTxt = "HeightVMax"
- static QString saveTimeFormatMinuteTXT = "yyyy-MM-dd_HH-mm-00"
- static QString saveTimeFormatHourTXT = "yyyy-MM-dd_HH"
- static QString saveTimeFormatDayTXT = "yyyy-MM-dd"
- static QString saveTimeFormatMonthTXT = "yyyy-MM"
- static QString saveDataMainTxt = "Data Path folder"
- static QString saveDataMain = "./Data/"
- static QString saveTempFileTxt = "Save Temp File Name and Path"
- static QString saveTempFile = "./Data/tempData.csv"
- static QString settingFileTxt = "Setting_File_Name_and_Path"
- static QString settingFile = "./Setting/settings.ini"
- static QString stateNotFounded = "NOT FOUNDED"
- static QString stateFounded = "FOUNDED"
- static QString stateOnProgramming = "on programming..."
- static QString stateCheckProgramming = "check programming..."
- static QString stateProgrammingSuccessful = "programming successful"
- static QString stateInit = "INIT"
- static QString stateOnReading = "ON READING"
- static QString stateReady = "READY"
- static QString ADS1115_1Title = "ADS1115_1"
- static QString ADS1115_2Title = "ADS1115_2"
- static QString ADS1115_Chan0 = "chan 0"
- static QString ADS1115_Chan1 = "chan 1"
- static QString ADS1115_Chan2 = "chan 2"
- static QString ADS1115 Chan3 = "chan 3"
- static QString ADS1115_Liter = "lt"
- static QString ADS1115_Volt = " V"
- static QString bme280Title = "BME 280"
- static QString bme280Temperature = "Temp"
- static QString bme280Humidity = "Hum"
- static QString bme280Pressure = "Press"
- static QString bme280DegCelcuis = "°C"
- static QString bme280PerCent = "%"
- static QString bme280Milibar = "mb"
- static quint16 pressureCapteurRangeMaxInPlus = 26500
- static quint16 pressureCapteurHeightMaxWater = 5000
- static double **densityWater** = 1
- static double densityOil = 0.84
- static double densityOilECO = 0.84
- static QMap< int, QString > TankObjectName
- static QMap< int, QString > HomeViewObject

5.34.1 Member Function Documentation

5.34.1.1 initErrorPossible()

```
QMap< int, QString > GlobaleStaticValue::initErrorPossible ( ) [static]
```

init the array for all possible error on application

\func initErrorPossible static function to init the array for all tank object name possible

5.34.1.2 initHomeViewObject()

```
QMap< int, QString > GlobaleStaticValue::initHomeViewObject ( ) [static]
```

init the array for all home view object

\func initHomeViewObject static function to init the array for all tank object name possible

5.34.1.3 initTankObjectName()

```
QMap< int, QString > GlobaleStaticValue::initTankObjectName ( ) [static]
```

init the array for all tank object name possible

\func initTankObjectName static function to init the array for all tank object name possible

5.34.2 Member Data Documentation

5.34.2.1 welcomeText

```
QString GlobaleStaticValue::welcomeText [static]
```

Initial value:

The documentation for this class was generated from the following files:

- · SmartHomeDomotic/globalestaticvalue.h
- SmartHomeDomotic/globalestaticvalue.cpp

5.35 GlobalStyle Class Reference

Static Public Member Functions

- static void setBackGroundColor (QCustomPlot *customPlot)
- static void **setStylePlot** (QCustomPlot *customPlot, bool tickAsTime)
- static void setStyleStatisticPlot (QCustomPlot *customPlot, bool tickAsTime)
- static void **setTraceColorTemperaturePlot** (QCPGraph *graph)
- static void setTraceColorTemperatureMinPlot (QCPGraph *graph, QCPGraph *graphAbove)
- static void setTraceColorHumidityPlot (QCPGraph *graph)
- static void setTraceColorHumidityMaxPlot (QCPGraph *graph)
- static void setTraceColorHumidityMinPlot (QCPGraph *graph, QCPGraph *graphAbove)
- static void setTraceColorPressurePlot (QCPGraph *graph)
- static void setTraceColorPressureMinPlot (QCPGraph *graph, QCPGraph *graphAbove)
- static void setTraceColorConsoPlot (QCPGraph *graph)
- static void **setTraceColorConsoMinPlot** (QCPGraph *graph, QCPGraph *graphAbove)
- static void setTraceColorTankTrace1 (QCPGraph *graph)
- static void setTraceColorTankTrace2 (QCPGraph *graph)
- static void setTraceColorTankTrace3 (QCPGraph *graph)
- static void setTraceColorTankTrace4 (QCPGraph *graph)
- static void setTraceColorTankTrace5 (QCPGraph *graph)
- static void setTraceColorTankTrace6 (QCPGraph *graph)
- static QColor traceColorTemperatureMaxPlot ()
- static void setTraceColorTemperatureMaxPlot (const QColor &traceColorTemperatureMaxPlot)

Static Public Attributes

- · static QColor _backGroundColor
- static QColor _gridColorPlot
- static QColor _axisColorPlot
- static QColor _axisTickPlot
- static QColor _traceColorTemperaturePlot
- static QColor <u>traceColorTemperatureMinPlot</u>
- static QColor traceColorHumidityPlot
- static QColor _traceColorPressurePlot
- static QColor traceColorConsoPlot
- static QColor _traceColortank1
- static QColor _traceColortank2
- · static QColor _traceColortank3
- static QColor _traceColortank4
- static QColor _traceColortank5
- static QColor _traceColortank6

The documentation for this class was generated from the following files:

- · SmartHomeDomotic/globalstyle.h
- SmartHomeDomotic/globalstyle.cpp

5.36 HomeViewObject Struct Reference

Array for all home view object.

#include <globalestaticvalue.h>

5.36.1 Detailed Description

Array for all home view object.

Linked the E_TankObjectName to the objectName Use the objectName as groupe for saving the data

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

· SmartHomeDomotic/globalestaticvalue.h

5.37 Main Class Reference

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

· SmartHomeDomotic/main.h

5.38 sbme280_calib_data Struct Reference

Public Attributes

- quint16 dig_T1
- qint16 dig_T2
- qint16 dig_T3
- quint16 dig_P1
- qint16 dig P2
- qint16 dig_P3
- qint16 dig_P4
- qint16 **dig_P5**
- qint16 dig_P6
- qint16 dig_P7
- qint16 dig_P8
- qint16 dig P9
- quint8 dig_H1
- qint16 dig_H2
- quint8 dig_H3
- qint16 dig_H4
- qint16 dig_H5
- qint8 dig_H6
- qint32 t_fine

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

• SmartHomeDomotic/BME280/bme280.h

5.39 sbme280_data Struct Reference

bme280 sensor which comprises of temperature, pressure and humidity data

```
#include <bme280.h>
```

Public Attributes

- · double pressure
- double temperature
- double humidity

5.39.1 Detailed Description

bme280 sensor which comprises of temperature, pressure and humidity data

\sbme280_data

5.39.2 Member Data Documentation

5.39.2.1 humidity

double sbme280_data::humidity

Compensated humidity

5.39.2.2 pressure

double sbme280_data::pressure

Compensated pressure

5.39.2.3 temperature

double sbme280_data::temperature

Compensated temperature

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

• SmartHomeDomotic/BME280/bme280.h

5.40 sbme280_dev Struct Reference

bme280 device ure

#include <bme280.h>

Collaboration diagram for sbme280_dev:

Public Attributes

- quint8 chip_id
- quint8 dev_id
- sbme280_calib_data calib_data
- sbme280_uncomp_data uncomp_data
- sbme280_data comp_data
- sbme280_setting settings

5.40.1 Detailed Description

bme280 device ure

\sbme280_dev

5.40.2 Member Data Documentation

```
5.40.2.1 calib_data
```

sbme280_calib_data sbme280_dev::calib_data

Device Id

5.40.2.2 comp_data

sbme280_data sbme280_dev::comp_data

Uncompensated data

5.40.2.3 dev_id

quint8 sbme280_dev::dev_id

Chip Id

5.40.2.4 settings

```
sbme280_setting sbme280_dev::settings
```

Compensated data

5.40.2.5 uncomp_data

```
sbme280_uncomp_data sbme280_dev::uncomp_data
```

Trim data

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

· SmartHomeDomotic/BME280/bme280.h

5.41 sbme280_setting Struct Reference

bme280 sensor settings ure which comprises of mode, oversampling and filter settings.

```
#include <bme280.h>
```

Public Attributes

- quint8 osr_p
- quint8 osr_t
- quint8 osr_h
- quint8 filter
- quint8 power_mode
- quint8 standby_time

5.41.1 Detailed Description

bme280 sensor settings ure which comprises of mode, oversampling and filter settings.

\sbme280_setting

5.41.2 Member Data Documentation

5.41.2.1 filter

```
quint8 sbme280_setting::filter
```

humidity oversampling

5.41.2.2 osr_h

```
quint8 sbme280_setting::osr_h
```

temperature oversampling

5.41.2.3 osr t

```
quint8 sbme280_setting::osr_t
```

pressure oversampling

5.41.2.4 power_mode

```
quint8 sbme280_setting::power_mode
```

filter coefficient

5.41.2.5 standby_time

```
quint8 sbme280_setting::standby_time
```

Power mode

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

• SmartHomeDomotic/BME280/bme280.h

5.42 sbme280_uncomp_data Struct Reference

Public Attributes

- · quint8 pmsb
- quint8 plsb
- quint8 pxsb
- quint8 tmsb
- quint8 tlsb
- quint8 txsb
- quint8 hmsb
- quint8 hlsb
- quint32 temperature
- · quint32 pressure
- · quint32 humidity

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

• SmartHomeDomotic/BME280/bme280.h

5.43 Setting Class Reference

Inheritance diagram for Setting:

Collaboration diagram for Setting:

Public Slots

- void receivedTankIsVisible (const int objectID, const bool isVisible)
- void receivedTankTitleChanged (const int objectID, const QString titleText)
- void receivedTankVolumeMaxChanged (const QString objectName, const int volumeMax)
- void receivedWarningLowLevelFromTank (const QString objectName, const bool isActive)
- void receivedTankWarningLowLevelChanged (const QString objectName, const int lowLevel)
- void receivedTankLiquideFillupChanged (const QString objectName, const int liquideFillup)
- void receivedTankHeightMaxLevelChanged (const QString objectName, const int heightVMax)
- void receivedTankActualVolumeChanged (const int objectID, const int volumeActual)
- void receivedGraphReccordTimesChanged (const int reccordTime)
- void receivedOnCalibrationMode (const bool onCalibration)

Public Member Functions

• Setting (QObject *parent=nullptr, QObject *homeViewer=nullptr, QObject *tankViewer=nullptr, QObject *settingViewer=nullptr, QObject *statisticViewer=nullptr, BME280Item *bme280=nullptr, ADS1115Item *ads1115_1=nullptr, ADS1115Item *ads1115_2=nullptr, DataManager *dataManager=nullptr)

Private Member Functions

- · void initSetting ()
- void initTankObjectName (int objectID, QString objectName)
- void initTankColorInHomePage (int objectID)
- void initTankTitleText (int objectID, QString isVisible)
- void initHomeViewObject (int objectID, QString obbjectName)
- void initTanklsVisible (int objectID, bool isVisible)
- void initTankVolumeMax (int objectID, int volumeMax)
- void initTankWarningLowLevel (int objectID, int warningLowLevel)
- void initTankLiquideInside (int objectID, int tankLiquideInside)
- void initHeightVMaxValue (int objectID, int HeightVMaxValue)
- quint8 calculNbTraceInPlot ()
- void saveSettings ()
- void saveTankSetting (Tank *tank)
- void loadSettings ()
- void loadTankSetting (Tank *tank)

Private Attributes

```
    QMap< int, QString > _tankObjectNameArray
```

- QMap< int, QString > _homeViewObject
- QString _settingFileName
- QSettings * setting
- Tank * _Tank1
- Tank * _Tank2
- Tank * _Tank3
- Tank * _Tank4
- Tank * _Tank5
- Tank * Tank6
- bool_tanklsVisible
- · quint8 _nbTrace
- QObject * _homeViewer
- QObject * _tankViewer
- QObject * _settingViewer
- QObject * _statisticViewer
- BME280Item * _bme280
- ADS1115Item * _ads1115_1
- ADS1115Item * _ads1115_2
- DataManager * _dataManager

The documentation for this class was generated from the following files:

- · SmartHomeDomotic/setting.h
- SmartHomeDomotic/setting.cpp

5.44 **Tank Class Reference**

Inheritance diagram for Tank:

Collaboration diagram for Tank:

Public Member Functions

```
• Tank (int objectID, QString objectName, QObject *parent=nullptr)
```

constructor for Tank

• QString objectName () const

getter for _objecName property

• QString title () const

getter for _title property

void setTitle (const QString &title)

setter for _title property

• GlobalEnumerate::E TankLiquidInside LiquideFillup () const

getter for _liquideFillup property

- void setLiquideFillup (const GlobalEnumerate::E_TankLiquidInside &LiquideFillup)
- void setLiquideFillup (const int &LiquideFillup)
- bool isVisible () const

getter for _isVisible property

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- · void setIsVisible (const bool isVisible)
- int volumeMax () const

```
getter for _volumeMax property
```

void setVolumeMax (const int &volumeMax)

```
setter for _setVolumeMax property
```

• int lowLevelValue () const

getter for _lowLevelValue property

void setLowLevelValue (const int &lowLevelValue)

```
setter for _setLowLevelValue property
```

• int objectID () const

```
getter for _objectID property
```

void setObjectID (int objectID)

```
setter for _setObjectID property
```

- int volumeMaxHeightInMilimeter () const
- void setVolumeMaxHeightInMilimeter (int volumeMaxHeightInMilimeter)

Private Attributes

- · int _objectID
- QString _objectName
- · QString _title
- GlobalEnumerate::E_TankLiquidInside _LiquideFillup
- · bool isVisible
- int _volumeMax
- int _lowLevelValue
- int _volumeMaxHeightInMilimeter

5.44.1 Constructor & Destructor Documentation

5.44.1.1 Tank()

constructor for Tank

Parameters

in	objectID	is the unique ID for this object type.
in	objectName	is the unique name for this object type.
in	parent	is the parent of the new widget. If it is nullptr (the default), the new widget will be a window. If not, it will be a child of parent, and be constrained by parent's geometry

The documentation for this class was generated from the following files:

- · SmartHomeDomotic/tank.h
- SmartHomeDomotic/tank.cpp

5.45 TankObjectName Struct Reference

Array for all tank object name possible.

```
#include <globalestaticvalue.h>
```

5.45.1 Detailed Description

Array for all tank object name possible.

Linked the E_TankObjectName to the objectName Use the objectName as groupe for saving the data

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

· SmartHomeDomotic/globalestaticvalue.h

5.46 timerthread Class Reference

Inheritance diagram for timerthread:

Collaboration diagram for timerthread:

Signals

• void delayFinished ()

Public Member Functions

- timerthread (bool isWorking, QString name, quint16 delay)
- void startWorking ()

start working operation

• void stopWorking ()

stop working operation

· bool isWorking () const

Static Public Member Functions

• static void usleep (unsigned long usecs)

waiting delay

• static void msleep (unsigned long msecs)

waiting delay

· static void sleep (unsigned long secs)

waiting delay

Protected Member Functions

• void run ()

called function when the thread start

Private Attributes

- quint16 _delay
- bool_isWorking

5.46.1 Member Function Documentation

5.46.1.1 msleep()

```
static void timerthread::msleep (
          unsigned long msecs ) [static]
```

waiting delay

Parameters

in <i>msleep</i>	is the time in miliseconds
------------------	----------------------------

Returns

void: nothing

Here is the caller graph for this function:

5.46.1.2 run()

```
void timerthread::run ( ) [protected]
```

called function when the thread start

Returns

void: nothing

Here is the call graph for this function:

5.46.1.3 sleep()

waiting delay

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Parameters

in	secs	is the time in seconds
----	------	------------------------

Returns

void: nothing

5.46.1.4 startWorking()

```
timerthread::startWorking ( )
```

start working operation

Returns

void: nothing

5.46.1.5 stopWorking()

```
timerthread::stopWorking ( )
```

stop working operation

Returns

void: nothing

5.46.1.6 usleep()

```
static void timerthread::usleep (
          unsigned long usecs ) [static]
```

waiting delay

Parameters

in msleep is the time in microsecond	S
--------------------------------------	---

Returns

void: nothing

The documentation for this class was generated from the following files:

- SmartHomeDomotic/TimerThread.h
- SmartHomeDomotic/TimerThread.cpp

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Chapter 6

File Documentation

6.1 SmartHomeDomotic/DataManager/dataFrame.h File Reference

Structure of the data.

```
#include <QDebug>
Include dependency graph for dataFrame.h:
```

6.2 SmartHomeDomotic/DataManager/datamanager.h File Reference

thread to create the tick to read the data from BME 280, ADS1115 1, ADS1115 2

```
#include <QThread>
#include <QObject>
#include <QDebug>
#include <QTime>
#include <DataManager/dataFrame.h>
#include <DataManager/dataanalyser.h>
#include <BME280/bme280item.h>
#include <ADS1115/ads1115item.h>
```

Include dependency graph for datamanager.h: This graph shows which files directly or indirectly include this file:

Classes

class DataManager

Macros

• #define **DEBUG_SAVE_DATE_TIME** 0

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6.2.1 Detailed Description

thread to create the tick to read the data from BME 280, ADS1115_1, ADS1115_2

Author

Sébastien Blessemaille

Version

1.0

Date

21 november 2018

6.3 SmartHomeDomotic/errormanager.h File Reference

Management of the error messages.

```
#include <QWidget>
#include <QDebug>
#include <globalenumerate.h>
#include <globalestaticvalue.h>
#include <errormessage.h>
```

Include dependency graph for errormanager.h: This graph shows which files directly or indirectly include this file:

Classes

· class ErrorManager

6.3.1 Detailed Description

Management of the error messages.

Author

Sébastien Blessemaille

Version

1.0

Date

21 August 2017

6.4 SmartHomeDomotic/globalEnumatedAndExtern.h File Reference

All enumarate and externe variables.

```
#include <QObject>
#include <QString>
#include <QMap>
#include <QMetaType>
#include <QQmlEngine>
Include dependency graph for globalEnumatedAndExtern.h:
```

Classes

class GlobalEnumatedAndExtern

6.4.1 Detailed Description

All enumarate and externe variables.

Author

Sébastien Blessemaille

Version

1.0

Date

17 septembre 2017

6.5 SmartHomeDomotic/tank.h File Reference

tank object class, use to link them with the QML object

```
#include <QObject>
#include <globalenumerate.h>
```

Include dependency graph for tank.h: This graph shows which files directly or indirectly include this file:

Classes

class Tank

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6.5.1 Detailed Description

tank object class, use to link them with the QML object

Author

Sébastien Blessemaille

Version

1.0

Date

09 september 2018

6.6 SmartHomeDomotic/TimerThread.h File Reference

generic thread to create a tick

```
#include <QtDebug>
#include <QThread>
```

Include dependency graph for TimerThread.h: This graph shows which files directly or indirectly include this file:

Classes

· class timerthread

6.6.1 Detailed Description

generic thread to create a tick

Author

Sébastien Blessemaille

Version

1.0

Date

17 septembre 2017

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