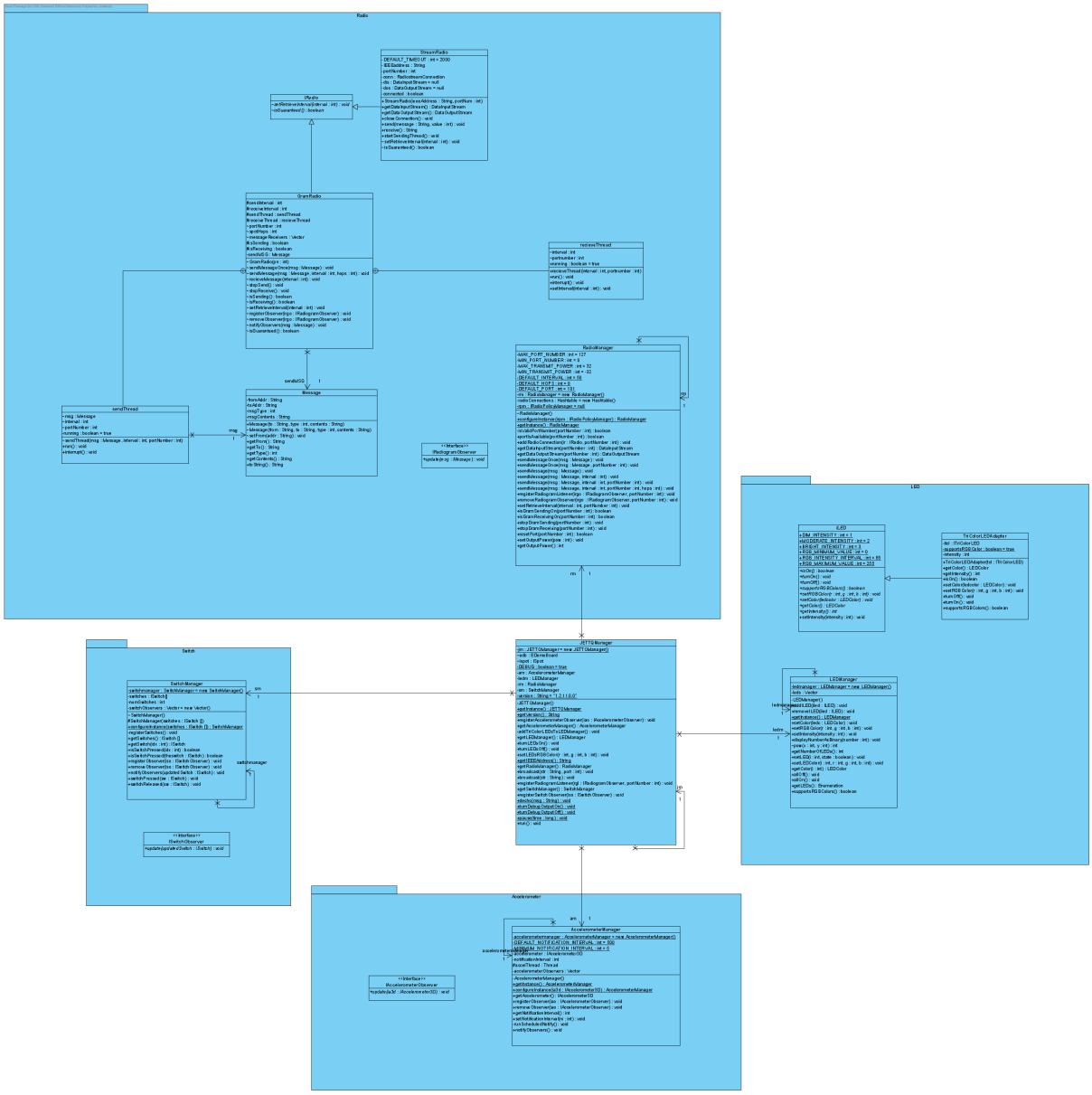
JETTQ

Class Diagram

JETTQ



Summary

Name	Documentation
Radio	
StreamRadio	StreamRadio class handles the data stream through the Radio Stream Connection @author JETTQ
IRadio	Abstract class for using the SPOT's radio. @author JETTQ
GramRadio	GramRadio class 4 States - Null - Just Sending - Just Receiving - Sending and Receiving @author navien21
recieveThread	This thread class handles the receiving of messages @author JETTQ
RadioManager	Manager class for the SPOT's radio. Used by JETTQManager. @author JETTQ
Message	This class represents a message that is sent from one SPOT to another. It has to and from fields, as well as a String for the content and a type which is represented by an int (User defines it's meaning). @author JETTQ
sendThread	This thread class handles the sending of messages. @author JETTQ
IRadiogramObserver	Interface for a GramRadio observer. @author JETTQ
LED	
ILED	Abstract class for using the LEDs on the SPOT. Implements only the setIntensity method. @author JETTQ [jettq@wpi.edu] @date 09-28-08
TriColorLEDAdapter	The TriColorLEDAdapter extends ILED and handles the Tricolor LEDs on the SPOT. It turns them on and off and adjusts their color. @author JETTQ [jettq@wpi.edu] @date 09-28-08
LEDManager	The LEDManager class handles the use of the LEDs. @author JETTQ [jettq@wpi.edu] @date 09-28-08
Switch	
SwitchManager	Manager class for the SPOT's switches @author JETTQ [jettq@wpi.edu]
ISwitchObserver	Interface for a switch observer @author JETTQ [jettq@wpi.edu]
JETTQManager	Main class of the JETTQ framework. The majority of the SPOT's functionality can be accessed through this. It also holds managers for the LED, Radio, Switch, and Accelerometer components. @author JETTQ [jettq@wpi.edu] @date 09-28-08 CS4233-Team Project
Accelerometer	
AccelerometerManager	Manager class for the SPOT's accelerometer. @author JETTQ [jettq@wpi.edu] @date 09-28-08
IAccelerometerObserver	Observer interface for the SPOT's accelerometer @author JETTQ [jettq@wpi.edu] @date 10-10-08

Details

Radio

Name	Value
Abstract	false
Leaf	false
Root	false
Visibility	public

Children

Name	Documentation
GramRadio	GramRadio class 4 States - Null - Just Sending - Just Receiving - Sending and Receiving @author navien21
IRadio	Abstract class for using the SPOT's radio. @author JETTQ
IRadiogramObserver	Interface for a GramRadio observer. @author JETTQ
Message	This class represents a message that is sent from one SPOT to another. It has to and from fields, as well as a String for the content and a type which is represented by an int (User defines it's meaning). @author JETTQ
RadioManager	Manager class for the SPOT's radio. Used by JETTQManager. @author JETTQ
StreamRadio	StreamRadio class handles the data stream through the Radio Stream Connection @author JETTQ

StreamRadio

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Documentation	StreamRadio class handles the data stream through the Radio Stream Connection @author JETTQ

Attributes

private DEFAULT_TIMEOUT : int			
Initial Value	2000		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private IEEEaddress : String			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private portNumber : int			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private conn : com.sun.spot.io.j2me.radiostream.RadiostreamConnection			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private dis : java.io.DataInputStream			
Initial Value	null		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private dos : java.io.DataOutputStream			
Initial Value	null		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private connected : boolean			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Operations

public StreamRadio (ieeeAddress : String, portNum : int)		
Parameters	**ieeeAddress**	
	Multiplicity	Unspecified
	Type	String
	Direction	inout
	portNum	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Default constructor. Starts a RadioStreamConnection between this SPOT and the one pointed to by the ieeeAddress @param ieeeAddress String address of the SPOT to stream to @param portNum int representing the port to connect on @throws Exception	
Ordered	false	
Unique	true	
Query	false	

public getDataInputStream () : java.io.DataInputStream	
Static	false
Leaf	false
Documentation	Function retrieves the Data Input Stream for the Stream Radio @return DataInputStream
Ordered	false
Unique	true
Query	false

public getDataOutputStream () : java.io.DataOutputStream	
Static	false
Leaf	false
Documentation	Function retrieves the Data Output Stream for the Stream Radio @return DataOutputStream
Ordered	false
Unique	true
Query	false

public closeConnection () : void	
Static	false
Leaf	false
Documentation	Close a RadiostreamConnection
Ordered	false
Unique	true
Query	false

public send (message : String, value : int) : void		
Parameters	message	
	Multiplicity	Unspecified
	Type	String
	Direction	inout
	value	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Function sends a stream to the Spot on a RadiostreamConnection @param message @param value @throws IOException if an error in the stream @throws NoRouteException	
Ordered	false	
Unique	true	
Query	false	

public receive () : String	
Static	false
Leaf	false
Documentation	Function retrieves a stream from another Spot @return the received stream
Ordered	false
Unique	true
Query	false

public startSendingThread () : void	
Static	false
Leaf	false
Documentation	This thread class handles the sending of messages
Ordered	false
Unique	true
Query	false

package setRetrieveInterval (interval : int) : void		
Parameters	interval	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Function sets the time interval for receiving messages	
Ordered	false	
Unique	true	
Query	false	

package isGuaranteed () : boolean	
Static	false
Leaf	false
Documentation	Check if the destination IEEE Address is valid @return true if the given IEEE address is valid; otherwise false
Ordered	false
Unique	true
Query	false

Relationships

Unamed Generalization	
From	IRadio
Substitutable	false
Visibility	Unspecified

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\Radio\StreamRadio.java	
Description	Source
Type	File

IRadio

Name	Value
Active	false
Business Model	false
Visibility	package
Leaf	false
Root	false
Documentation	Abstract class for using the SPOT's radio. @author JETTQ

Operations

package setRetrieveInterval (interval : int) : void		
Parameters	**interval**	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Ordered	false	
Unique	true	
Query	false	

package isGuaranteed () : boolean	
Static	false
Leaf	false
Documentation	Returns whether the radio transmission is guaranteed or not. The transmission is guaranteed if it is a StreamRadio or a GramRadio that is not broadcasting @return guaranteed true if ACKing
Ordered	false
Unique	true
Query	false

Relationships

Unamed Generalization	
To	GramRadio
Substitutable	false
Visibility	Unspecified

Unamed Generalization	
To	StreamRadio
Substitutable	false
Visibility	Unspecified

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\Radio\IRadio.java	
Description	Source
Type	File

GramRadio

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Documentation	GramRadio class 4 States - Null - Just Sending - Just Receiving - Sending and Receiving @author navien21

Children

Name	Documentation
recieveThread	This thread class handles the receiving of messages @author JETTQ
sendThread	This thread class handles the sending of messages. @author JETTQ

Attributes

protected sendInterval : int			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

protected receiveInterval : int			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

protected sendThread : sendThread			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

protected receiveThread : recieveThread			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

package portNumber : int			
Documentation	port number		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

package spotHops : int			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

package messageReceivers : java.util.Vector			
Documentation	a list of devices which will receive the message		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

protected isSending : boolean			
Documentation	status of sending and receiving		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

protected isReceiving : boolean			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private sendMSG : Message			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Operations

package GramRadio (pn : int)		
Parameters	pn	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Constructor of a gram radio connection @param pn port number used for the gram radio connection	
Ordered	false	
Unique	true	
Query	false	

package sendMessageOnce (msg : Message) : void		
Parameters	msg	
	Multiplicity	Unspecified
	Type	Message
	Direction	inout
Static	false	
Leaf	false	
Documentation	Broadcast a single message. This method does not try to re-send the message. @param msg Message object to broadcast	
Ordered	false	
Unique	true	
Query	false	

package sendMessage (msg : Message, interval : int, hops : int) : void		
Parameters	**msg**	
	Multiplicity	Unspecified
	Type	Message
	Direction	inout
	interval	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	hops	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Function sends a Datagram message to another device @param msg message to be sent @param interval time interval of sending a message @param hops **IGNORED** Not implemented in this file release.	
Ordered	false	
Unique	true	
Query	false	

package recieveMessage (interval : int) : void		
Parameters	**interval**	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Function retrieves a Datagram message from other devices @param interval time interval of receiving a message	
Ordered	false	
Unique	true	
Query	false	

package stopSend () : void	
Static	false
Leaf	false
Documentation	Function stops sending the message
Ordered	false
Unique	true
Query	false

package stopReceive () : void	
Static	false
Leaf	false
Documentation	Function stops receiving the message
Ordered	false
Unique	true
Query	false

package isSending () : boolean	
Static	false
Leaf	false
Documentation	Check if the device is still sending the message @return true if the device is sending a message; otherwise false
Ordered	false
Unique	true
Query	false

package isReceiving () : boolean	
Static	false
Leaf	false
Documentation	Check if the device is still receiving the message @return true if the device is receiving a message; otherwise false
Ordered	false
Unique	true
Query	false

package setRetrieveInterval (interval : int) : void		
Parameters	interval	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Function sets the time interval for retrieving the message @param interval new time interval for retrieving the message	
Ordered	false	
Unique	true	
Query	false	

package registerObserver (irgo : IRadiogramObserver) : void		
Parameters	irgo	
	Multiplicity	Unspecified
	Type	IRadiogramObserver
	Direction	inout
Static	false	
Leaf	false	
Documentation	Register a Radiogram observer @param irgo a RadiogramObserver to be registered	
Ordered	false	
Unique	true	
Query	false	

package removeObserver (irgo : IRadiogramObserver) : void		
Parameters	irgo	
	Multiplicity	Unspecified
	Type	IRadiogramObserver
	Direction	inout
Static	false	
Leaf	false	
Documentation	Remove a Radiogram observer @param irgo a RadiogramObserver to be remove	
Ordered	false	
Unique	true	
Query	false	

package notifyObservers (msg : Message) : void		
Parameters	msg	
	Multiplicity	Unspecified
	Type	Message
	Direction	inout
Static	false	
Leaf	false	
Documentation	Notify the Observer @param msg new message	
Ordered	false	
Unique	true	
Query	false	

package isGuaranteed () : boolean	
Static	false
Leaf	false
Documentation	Check if the destination IEEE Address is valid Is not implemented in this release @return true if a valid IEEE address is specified; otherwise false
Ordered	false
Unique	true
Query	false

Relationships

Unamed Generalization	
From	IRadio
Substitutable	false
Visibility	Unspecified

Unamed Association		
To (sendMSG)	Name	Value
	End Model Element	Message
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	1
	Visibility	private
	Aggregation Kind	None
	Navigable	true
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\Radio\GramRadio.java	
Description	Source
Type	File

recieveThread

Name	Value
Active	false
Business Model	false
Visibility	private
Leaf	false
Root	false
Documentation	This thread class handles the receiving of messages @author JETTQ

Attributes

package interval : int			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

package portnumber : int			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

public running : boolean			
Initial Value	true		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Operations

public recieveThread (interval : int, portnumber : int)		
Parameters	**interval**	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	portnumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Default constructor @param interval Time in milliseconds to check for a message again @param portnumber Port to check for messages	
Ordered	false	
Unique	true	
Query	false	

public run () : void	
Static	false
Leaf	false
Documentation	The run method sets up the connection, checks for messages, and notifies any observers when a message is received.
Ordered	false
Unique	true
Query	false

public interrupt () : void	
Static	false
Leaf	false
Documentation	Stops checking for messages.
Ordered	false
Unique	true
Query	false

public setInterval (interval : int) : void		
Parameters	interval	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Sets the interval to check for messages. @param interval Time in milliseconds to re-check.	
Ordered	false	
Unique	true	
Query	false	

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\Radio\GramRadio.java	
Description	Source
Type	File

RadioManager

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Documentation	Manager class for the SPOT's radio. Used by JETTQManager. @author JETTQ

Attributes

private MAX_PORT_NUMBER : int			
Initial Value	127		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private MIN_PORT_NUMBER : int			
Initial Value	0		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private MAX_TRANSMIT_POWER : int			
Initial Value	32		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private MIN_TRANSMIT_POWER : int			
Initial Value	-32		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private DEFAULT_INTERVAL : int			
Documentation	default time interval for receiving a message		
Initial Value	50		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private DEFAULT_HOPS : int			
Initial Value	0		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private DEFAULT_PORT : int			
Initial Value	101		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private rm : RadioManager			
Initial Value	new RadioManager()		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private radioConnections : java.util.Hashtable			
Initial Value	new Hashtable()		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private rpm : com.sun.spot.peripheral.radio.IRadioPolicyManager			
Initial Value	null		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Operations

package RadioManager ()	
Static	false
Leaf	false
Documentation	Default Constructor
Ordered	false
Unique	true
Query	false

public configureInstance (irpm : com.sun.spot.peripheral.radio.IRadioPolicyManager) : RadioManager		
Parameters	irpm	
	Multiplicity	Unspecified
	Type	com.sun.spot.peripheral.radio.IRadioPolicyManager
	Direction	inout
Static	false	
Leaf	false	
Ordered	false	
Unique	true	
Query	false	

public getInstance () : RadioManager	
Static	false
Leaf	false
Documentation	Returns an instance of the RadioManager @return This RadioManager
Ordered	false
Unique	true
Query	false

private isValidPortNumber (portNumber : int) : boolean		
Parameters	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Check if the given port number is valid @param portNumber port number to be checked @return true if the port number is valid; otherwise false	
Ordered	false	
Unique	true	
Query	false	

public portIsAvailable (portNumber : int) : boolean		
Parameters	**portNumber**	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Checks to see if the given port is available @param portNumber Port to check @return true if the port is available, false otherwise	
Ordered	false	
Unique	true	
Query	false	

public addRadioConnection (ir : IRadio, portNumber : int) : void		
Parameters	**ir**	
	Multiplicity	Unspecified
	Type	IRadio
	Direction	inout
	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Adds a radio connection to the list of connections @param ir IRadio to connect @param portNumber Port to connect on	
Ordered	false	
Unique	true	
Query	false	

public getDataInputStream (portNumber : int) : java.io.DataInputStream		
Parameters	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Gets the DataInputStream to steam to another SPOT @param portNumber Port to stream on @return DataInputStream to write to	
Ordered	false	
Unique	true	
Query	false	

public getDataOutputStream (portNumber : int) : java.io.DataOutputStream		
Parameters	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Gets the DataOutputStream for a stream from another SPOT @param portNumber Port to stream on @return DataOutputStream to read from	
Ordered	false	
Unique	true	
Query	false	

public sendMessageOnce (msg : Message) : void		
Parameters	msg	
	Multiplicity	Unspecified
	Type	Message
	Direction	inout
Static	false	
Leaf	false	
Documentation	Sends a message without re-sending on the default port. @param msg Message object to send	
Ordered	false	
Unique	true	
Query	false	

public sendMessageOnce (msg : Message, portNumber : int) : void		
Parameters	**msg**	
	Multiplicity	Unspecified
	Type	Message
	Direction	inout
	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Send a message without re-sending on the specified port @param msg Message object to send. @param portNumber Port to send on.	
Ordered	false	
Unique	true	
Query	false	

public sendMessage (msg : Message) : void		
Parameters	**msg**	
	Multiplicity	Unspecified
	Type	Message
	Direction	inout
Static	false	
Leaf	false	
Documentation	Broadcasts a message with a default re-send interval on the default port. @param msg Message object to send.	
Ordered	false	
Unique	true	
Query	false	

public sendMessage (msg : Message, interval : int) : void		
Parameters	**msg**	
	Multiplicity	Unspecified
	Type	Message
	Direction	inout
	interval	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Broadcasts a message with the specified re-send interval on the default port. @param msg Message object to send @param interval Time in milliseconds to re-send.	
Ordered	false	
Unique	true	
Query	false	

public sendMessage (msg : Message, interval : int, portNumber : int) : void		
Parameters	**msg**	
	Multiplicity	Unspecified
	Type	Message
	Direction	inout
	interval	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Sends a message on the specified port with the specified re-send interval @param msg Message object to send @param interval Time in milliseconds to re-send @param portNumber Port to send on	
Ordered	false	
Unique	true	
Query	false	

public sendMessage (msg : Message, interval : int, portNumber : int, hops : int) : void		
Parameters	**msg**	
	Multiplicity	Unspecified
	Type	Message
	Direction	inout
	interval	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	hops	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Broadcasts a message on the GramRadio @param msg Message object to send @param interval Time in milliseconds to re-send @param portNumber Port to broadcast on @param hops Not implemented in this file release.	
Ordered	false	
Unique	true	
Query	false	

public registerRadiogramListener (irgo : IRadiogramObserver, portNumber : int) : void		
Parameters	**irgo**	
	Multiplicity	Unspecified
	Type	IRadiogramObserver
	Direction	inout
	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Registers a listener to the GramRadio on a given port @param irgo IRadiogramObserver to register @param portNumber Port to listen on	
Ordered	false	
Unique	true	
Query	false	

public removeRadiogramObserver (irgo : IRadiogramObserver, portNumber : int) : void		
Parameters	**irgo**	
	Multiplicity	Unspecified
	Type	IRadiogramObserver
	Direction	inout
	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Removes the given listener from the given port @param irgo IRadiogramObserver to remove @param portNumber Port to stop listening on	
Ordered	false	
Unique	true	
Query	false	

public setRetrieveInterval (interval : int, portNumber : int) : void		
Parameters	interval	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Sets the message retrieval interval @param interval Time in milliseconds to retrieve messages @param portNumber Port to retrieve on	
Ordered	false	
Unique	true	
Query	false	

public isGramSendingOn (portNumber : int) : boolean		
Parameters	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Checks if the GramRadio is sending on the given port @param portNumber Port to check @return true if the GramRadio is sending on the port, false otherwise	
Ordered	false	
Unique	true	
Query	false	

public isGramReceivingOn (portNumber : int) : boolean		
Parameters	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Checks if the GramRadio is receiving on the given port @param portNumber Port to check @return true if the GramRadio is receiving on the port, false otherwise	
Ordered	false	
Unique	true	
Query	false	

public stopGramSending (portNumber : int) : void		
Parameters	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Tells the GramRadio to stop sending on the given port @param portNumber Port to stop sending on	
Ordered	false	
Unique	true	
Query	false	

public stopGramReceiving (portNumber : int) : void		
Parameters	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Tells the GramRadio to stop receiving on a given port @param portNumber Port to stop receiving on	
Ordered	false	
Unique	true	
Query	false	

public resetPort (portNumber : int) : boolean		
Parameters	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Closes the connection on the specified port. @param portNumber Port to close @return true if a connection is closed, false otherwise	
Ordered	false	
Unique	true	
Query	false	

public setOutputPower (pow : int) : void		
Parameters	pow	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Function sets the output power of the radio to the given value @param pow The new output power level	
Ordered	false	
Unique	true	
Query	false	

public getOutputPower () : int	
Static	false
Leaf	false
Documentation	Function return the current output power of the radio @return int representing the output power
Ordered	false
Unique	true
Query	false

Relationships

Unamed Association		
To (rm)	**Name**	**Value**
	End Model Element	RadioManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	1
	Visibility	private
	Aggregation Kind	None
	Navigable	true
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
From	**Name**	**Value**
	End Model Element	JETTQManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	private
	Aggregation Kind	None
	Navigable	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
From	Name	Value
	End Model Element	RadioManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	private
	Aggregation Kind	None
	Navigable	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\Radio\RadioManager.java	
Description	Source
Type	File

Message

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Documentation	This class represents a message that is sent from one SPOT to another. It has to and from fields, as well as a String for the content and a type which is represented by an int (User defines it's meaning). @author JETTQ

Attributes

private fromAddr : String			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private toAddr : String			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private msgType : int			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private msgContents : String			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Operations

public Message (to : String, type : int, contents : String)		
Parameters	**to**	
	Multiplicity	Unspecified
	Type	String
	Direction	inout
	type	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	contents	
	Multiplicity	Unspecified
	Type	String
	Direction	inout
Static	false	
Leaf	false	
Documentation	Default public constructor @param to IEEE address of the SPOT the message is being sent to @param type Type of the message. @param contents String content of the message	
Ordered	false	
Unique	true	
Query	false	

package Message (from : String, to : String, type : int, contents : String)		
Parameters	**from**	
	Multiplicity	Unspecified
	Type	String
	Direction	inout
	to	
	Multiplicity	Unspecified
	Type	String
	Direction	inout
	type	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	contents	
	Multiplicity	Unspecified
	Type	String
	Direction	inout
Static	false	
Leaf	false	
Ordered	false	
Unique	true	
Query	false	

package setFrom (addr : String) : void		
Parameters	**addr**	
	Multiplicity	Unspecified
	Type	String
	Direction	inout
Static	false	
Leaf	false	
Documentation	Sets the from address @param addr IEEE address of the SPOT sending the message.	
Ordered	false	
Unique	true	
Query	false	

public getFrom () : String	
Static	false
Leaf	false
Documentation	Get the from address @return IEEE address of the SPOT sending the message
Ordered	false
Unique	true
Query	false

public getTo () : String	
Static	false
Leaf	false
Documentation	Get the to address @return IEEE address of the SPOT the message is being sent to
Ordered	false
Unique	true
Query	false

public getType () : int	
Static	false
Leaf	false
Documentation	Get the type of the message @return Type of message
Ordered	false
Unique	true
Query	false

public getContents () : String	
Static	false
Leaf	false
Documentation	Get the contents of the message @return String representing the contents
Ordered	false
Unique	true
Query	false

public toString () : String	
Static	false
Leaf	false
Documentation	Prints the message in the following form: =====MSG===== To: [toAddr] From: [fromAddr] Type: [type] Contents: [msgContents] =====END=====
Ordered	false
Unique	true
Query	false

Relationships

Unamed Association		
From	Name	Value
	End Model Element	GramRadio
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	private
	Aggregation Kind	None
	Navigable	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
From	Name	Value
	End Model Element	sendThread
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	private
	Aggregation Kind	None
	Navigable	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\Radio\Message.java	
Description	Source
Type	File

sendThread

Name	Value
Active	false
Business Model	false
Visibility	private
Leaf	false
Root	false
Documentation	This thread class handles the sending of messages. @author JETTQ

Attributes

package msg : Message			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

package interval : int			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

package portNumber : int			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private running : boolean			
Initial Value	true		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Operations

package sendThread (msg : Message, interval : int, portNumber : int)		
Parameters	msg	
	Multiplicity	Unspecified
	Type	Message
	Direction	inout
	interval	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Default constructor @param msg Message object to send @param interval Time in milliseconds to resend @param portNumber Port to send on	
Ordered	false	
Unique	true	
Query	false	

public run () : void	
Static	false
Leaf	false
Documentation	The run method sets up the connection and sends the message.
Ordered	false
Unique	true
Query	false

public interrupt () : void	
Static	false
Leaf	false
Documentation	Stops the sending
Ordered	false
Unique	true
Query	false

Relationships

Unamed Association		
To (msg)	Name	Value
	End Model Element	Message
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	1
	Visibility	package
	Aggregation Kind	None
	Navigable	true
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\Radio\GramRadio.java	
Description	Source
Type	File

IRadiogramObserver

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Stereotypes	Interface
Documentation	Interface for a GramRadio observer. @author JETTQ

Operations

public update (msg : Message) : void		
Parameters	**msg**	
	Multiplicity	Unspecified
	Type	Message
	Direction	inout
Static	false	
Leaf	false	
Documentation	Updates when a message is sent or received. @param msg Message object being sent or received	
Ordered	false	
Unique	true	
Query	false	

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\Radio\IRadiogramObserver.java	
Description	Source
Type	File

LED

Name	Value
Abstract	false
Leaf	false
Root	false
Visibility	public

Children

Name	Documentation
ILED	Abstract class for using the LEDs on the SPOT. Implements only the setIntensity method. @author JETTQ [jettq@wpi.edu] @date 09-28-08
LEDManager	The LEDManager class handles the use of the LEDs. @author JETTQ [jettq@wpi.edu] @date 09-28-08
TriColorLEDAdapter	The TriColorLEDAdapter extends ILED and handles the Tricolor LEDs on the SPOT. It turns them on and off and adjusts their color. @author JETTQ [jettq@wpi.edu] @date 09-28-08

ILED

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Documentation	Abstract class for using the LEDs on the SPOT. Implements only the setIntensity method. @author JETTQ [jettq@wpi.edu] @date 09-28-08

Attributes

public DIM_INTENSITY : int			
Initial Value	1		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

public MODERATE_INTENSITY : int			
Initial Value	2		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

public BRIGHT_INTENSITY : int			
Initial Value	3		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

public RGB_MINIMUM_VALUE : int			
Initial Value	0		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

public RGB_INTENSITY_INTERVAL : int			
Initial Value	85		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

public RGB_MAXIMUM_VALUE : int			
Documentation	MAX RGB / # intensity intervals		
Initial Value	255		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Operations

public isOn () : boolean	
Static	false
Leaf	false
Documentation	Function determines whether or not the LED is ON @return True if on, False otherwise
Ordered	false
Unique	true
Query	false

public turnOn () : void	
Static	false
Leaf	false
Documentation	Function turns ON the LED
Ordered	false
Unique	true
Query	false

public turnOff () : void	
Static	false
Leaf	false
Documentation	Function turns OFF the LED
Ordered	false
Unique	true
Query	false

public supportsRGBColors () : boolean	
Static	false
Leaf	false
Documentation	Function determines if an LED supports RGB Color codes @return True if LED supports RGB color codes, false otherwise
Ordered	false
Unique	true
Query	false

public setRGBColor (r : int, g : int, b : int) : void		
Parameters	**r**	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	g	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	b	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Function sets the Color displayed by the LED @param r Int representing the RED color value (0-255) @param g Int representing the GREEN color value (0-255) @param b Int representing the BLUE color value (0-255)	
Ordered	false	
Unique	true	
Query	false	

public setColor (ledcolor : com.sun.spot.sensorboard.peripheral.LEDColor) : void		
Parameters	**ledcolor**	
	Multiplicity	Unspecified
	Type	com.sun.spot.sensorboard.peripheral.LEDColor
	Direction	inout
Static	false	
Leaf	false	
Documentation	Function set the Color as specified in the given LEDColor object @param ledcolor The LEDColor object containing the color to display	
Ordered	false	
Unique	true	
Query	false	

public getColor () : com.sun.spot.sensorboard.peripheral.LEDColor	
Static	false
Leaf	false
Documentation	Function gets the current Color as a LEDColor object @return the LEDColor of the LED
Ordered	false
Unique	true
Query	false

public getIntensity () : int	
Static	false
Leaf	false
Documentation	Function retrieves the current display Intensity @return int representing how bright the LED is.
Ordered	false
Unique	true
Query	false

public setIntensity (intensity : int) : void		
Parameters	intensity	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Function sets the current display Intensity @param intensity The new Intensity	
Ordered	false	
Unique	true	
Query	false	

Relationships

Unamed Generalization	
To	TriColorLEDAdapter
Substitutable	false
Visibility	Unspecified

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\LED\ILED.java	
Description	Source
Type	File

TriColorLEDAdapter

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Documentation	The TriColorLEDAdapter extends ILED and handles the Tricolor LEDs on the SPOT. It turns them on and off and adjusts their color. @author JETTQ [jettq@wpi.edu] @date 09-28-08

Attributes

private itcl : com.sun.spot.sensorboard.peripheral.ITriColorLED			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private supportsRGBColor : boolean			
Initial Value	true		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private intensity : int			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Operations

public TriColorLEDAdapter (tcl : com.sun.spot.sensorboard.peripheral.ITriColorLED)		
Parameters	tcl	
	Multiplicity	Unspecified
	Type	com.sun.spot.sensorboard.peripheral.ITriColorLED
	Direction	inout
Static	false	
Leaf	false	
Documentation	TriColorLED constructor @param tcl the TriColor LED	
Ordered	false	
Unique	true	
Query	false	

public getColor () : com.sun.spot.sensorboard.peripheral.LEDColor	
Static	false
Leaf	false
Documentation	Gets the LED color of the TriColorLED @return the led color
Ordered	false
Unique	true
Query	false

public getIntensity () : int	
Static	false
Leaf	false
Documentation	Gets the intensity of the TriColorLED @return the intensity
Ordered	false
Unique	true
Query	false

public isOn () : boolean	
Static	false
Leaf	false
Documentation	Checks if the TriColorLED is on @return true if the TriColorLED is on, false if it is off
Ordered	false
Unique	true
Query	false

public setColor (ledcolor : com.sun.spot.sensorboard.peripheral.LEDColor) : void		
Parameters	ledcolor	
	Multiplicity	Unspecified
	Type	com.sun.spot.sensorboard.peripheral.LEDColor
	Direction	inout
Static	false	
Leaf	false	
Documentation	Set the LED color of the TriColorLED @param ledcolor the led color that the TriColorLED will be set to	
Ordered	false	
Unique	true	
Query	false	

public setRGBColor (r : int, g : int, b : int) : void		
Parameters	r	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	g	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	b	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Sets the RGB color of the TriColorLED r the red value of the associated led g the green value of the associated led b the blue value of the associated led	
Ordered	false	
Unique	true	
Query	false	

public turnOff () : void	
Static	false
Leaf	false
Documentation	Turns off the TriColorLED
Ordered	false
Unique	true
Query	false

public turnOn () : void	
Static	false
Leaf	false
Documentation	Turns on the TriColorLED
Ordered	false
Unique	true
Query	false

public supportsRGBColors () : boolean	
Static	false
Leaf	false
Documentation	Verifies if the TriColorLED support RGB colors @return true if it does support rgb colors, false if it does not
Ordered	false
Unique	true
Query	false

Relationships

Unamed Generalization	
From	ILED
Substitutable	false
Visibility	Unspecified

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\LED\TriColorLEDAdapter.java	
Description	Source
Type	File

LEDManager

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Documentation	The LEDManager class handles the use of the LEDs. @author JETTQ [jettq@wpi.edu] @date 09-28-08

Attributes

private ledmanager : LEDManager			
Initial Value	new LEDManager()		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private leds : java.util.Vector			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Operations

private LEDManager ()	
Static	false
Leaf	false
Ordered	false
Unique	true
Query	false

public addILED (iled : ILED) : void		
Parameters	iled	
	Multiplicity	Unspecified
	Type	ILED
	Direction	inout
Static	false	
Leaf	false	
Documentation	Adds an ILed Element @param iled the ILed to be added	
Ordered	false	
Unique	true	
Query	false	

public removeILED (iled : ILED) : void		
Parameters	iled	
	Multiplicity	Unspecified
	Type	ILED
	Direction	inout
Static	false	
Leaf	false	
Documentation	Removes an ILed Element @param iled the ILed to be removed	
Ordered	false	
Unique	true	
Query	false	

public getInstance () : LEDManager	
Static	false
Leaf	false
Documentation	Function retrieves the LED Manager @return The LED Manager
Ordered	false
Unique	true
Query	false

public setColor (ledc : com.sun.spot.sensorboard.peripheral.LEDColor) : void		
Parameters	ledc	
	Multiplicity	Unspecified
	Type	com.sun.spot.sensorboard.peripheral.LEDColor
	Direction	inout
Static	false	
Leaf	false	
Documentation	sets the color of the LED @param ledc the LED color	
Ordered	false	
Unique	true	
Query	false	

public setRGBColor (r : int, g : int, b : int) : void		
Parameters	r	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	g	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	b	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Sets the RGB color of an LED @param r the color of the red LED @param g the color of the green LED @param b the color of the blue LED	
Ordered	false	
Unique	true	
Query	false	

public setIntensity (intensity : int) : void		
Parameters	intensity	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Sets the intensity of all LEDs to the intensity value Presets are Dim = 1, Moderate = 2, High = 3 @param intensity	
Ordered	false	
Unique	true	
Query	false	

public displayNumberAsBinary (number : int) : void		
Parameters	number	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Function attempts to display the given number in binary using the LEDs @param number The number to be displayed in binary @throws Exception if number is negative or too large	
Ordered	false	
Unique	true	
Query	false	

package pow (x : int, y : int) : int		
Parameters	x	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	y	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	The Math.pow method because the Math package used by the SPOTS does not include this function. @param x the base of the exponent @param y The power to raise to @return An integer of x^y	
Ordered	false	
Unique	true	
Query	false	

public getNumberOfLEDs () : int	
Static	false
Leaf	false
Documentation	Function retrieves the number of LEDs managed @return Int the number of LEDs
Ordered	false
Unique	true
Query	false

public setLED (i : int, state : boolean) : void		
Parameters	**i**	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	state	
	Multiplicity	Unspecified
	Type	boolean
	Direction	inout
Static	false	
Leaf	false	
Documentation	Turns an LED on or off based on a boolean value @param i Index of the LED to set @param state if true, turns the LED on, otherwise turns it off.	
Ordered	false	
Unique	true	
Query	false	

public setLEDColor (i : int, r : int, g : int, b : int) : void		
Parameters	**i**	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	r	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	g	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	b	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Set an LED's color to an RGB value @param i Index of the LED to set @param r Amount of red @param g Amount of green @param b Amount of blue	
Ordered	false	
Unique	true	
Query	false	

public getColor (i : int) : com.sun.spot.sensorboard.peripheral.LEDColor		
Parameters	**i**	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Get the color of a specific LED @param i Index of the LED to check @return LEDColor object for the specified LED	
Ordered	false	
Unique	true	
Query	false	

public allOff () : void	
Static	false
Leaf	false
Documentation	Function turns all LEDs off
Ordered	false
Unique	true
Query	false

public allOn () : void	
Static	false
Leaf	false
Documentation	Function turns all LEDs on
Ordered	false
Unique	true
Query	false

public getLEDs () : java.util.Enumeration	
Static	false
Leaf	false
Documentation	Gets the possible LED elements @return the LED elements available for use
Ordered	false
Unique	true
Query	false

public supportsRGBColors () : boolean	
Static	false
Leaf	false
Documentation	Checks if RGB colors are supported @return true if they are, false if not
Ordered	false
Unique	true
Query	false

Relationships

Unamed Association		
To (ledmanager)	Name	Value
	End Model Element	LEDManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	1
	Visibility	private
	Aggregation Kind	None
	Navigable	true
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
From	Name	Value
	End Model Element	JETTQManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	private
	Aggregation Kind	None
	Navigable	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
From	Name	Value
	End Model Element	LEDManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	private
	Aggregation Kind	None
	Navigable	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\LED\LEDManager.java	
Description	Source
Type	File

Switch

Name	Value
Abstract	false
Leaf	false
Root	false
Visibility	public

Children

Name	Documentation
ISwitchObserver	Interface for a switch observer @author JETTQ [jettq@wpi.edu]
SwitchManager	Manager class for the SPOT's switches @author JETTQ [jettq@wpi.edu]

SwitchManager

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Documentation	Manager class for the SPOT's switches @author JETTQ [jettq@wpi.edu]

Attributes

private switchmanager : SwitchManager			
Initial Value	new SwitchManager()		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private switches : com.sun.spot.sensorboard.peripheral.ISwitch			
Documentation	Fix?		
Type Modifier	[]		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private numSwitches : int			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private switchObservers : java.util.Vector			
Initial Value	new Vector()		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Operations

package SwitchManager ()	
Static	false
Leaf	false
Documentation	Default Constructor
Ordered	false
Unique	true
Query	false

protected SwitchManager (switches : com.sun.spot.sensorboard.peripheral.ISwitch)		
Parameters	switches	
	Multiplicity	Unspecified
	Type Modifier	[]
	Type	com.sun.spot.sensorboard.peripheral.ISwitch
	Direction	inout
Static	false	
Leaf	false	
Documentation	Protected Contructor @param switches an array of ISwitches	
Ordered	false	
Unique	true	
Query	false	

public configureInstance (switches : com.sun.spot.sensorboard.peripheral.ISwitch) : SwitchManager		
Parameters	switches	
	Multiplicity	Unspecified
	Type Modifier	[]
	Type	com.sun.spot.sensorboard.peripheral.ISwitch
	Direction	inout
Static	false	
Leaf	false	
Documentation	Configures the manager for the given switches @param switches An array of ISwitches on the SPOT @return an instance of SwitchManager	
Ordered	false	
Unique	true	
Query	false	

private registerSwitches () : void	
Static	false
Leaf	false
Documentation	Sets up the manager to listen to the switches.
Ordered	false
Unique	true
Query	false

public getSwitches () : com.sun.spot.sensorboard.peripheral.ISwitch	
Static	false
Leaf	false
Documentation	Gets the switches being managed @return An array of ISwitches
Type Modifier	[]
Ordered	false
Unique	true
Query	false

public getSwitch (idx : int) : com.sun.spot.sensorboard.peripheral.ISwitch		
Parameters	idx	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Gets a specific switch @param idx Index of the switch to get @return ISwitch at the given index	
Ordered	false	
Unique	true	
Query	false	

public isSwitchPressed (idx : int) : boolean		
Parameters	idx	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Checks if a specific switch is pressed @param idx Index of the switch to check @return true if the switch is pressed, false otherwise	
Ordered	false	
Unique	true	
Query	false	

public isSwitchPressed (theswitch : com.sun.spot.sensorboard.peripheral.ISwitch) : boolean		
Parameters	theswitch	
	Multiplicity	Unspecified
	Type	com.sun.spot.sensorboard.peripheral.ISwitch
	Direction	inout
Static	false	
Leaf	false	
Documentation	Checks if a given switch is pressed @param theswitch An ISwitch object to check @return true if the ISwitch is pressed, false otherwise	
Ordered	false	
Unique	true	
Query	false	

public registerObserver (iso : ISwitchObserver) : void		
Parameters	iso	
	Multiplicity	Unspecified
	Type	ISwitchObserver
	Direction	inout
Static	false	
Leaf	false	
Documentation	Registers the observer for the switch	
Ordered	false	
Unique	true	
Query	false	

public removeObserver (iso : ISwitchObserver) : void		
Parameters	iso	
	Multiplicity	Unspecified
	Type	ISwitchObserver
	Direction	inout
Static	false	
Leaf	false	
Documentation	Removes the observer for the switch @param iso the switch observer to be removed	
Ordered	false	
Unique	true	
Query	false	

public notifyObservers (updatedSwitch : com.sun.spot.sensorboard.peripheral.ISwitch) : void		
Parameters	updatedSwitch	
	Multiplicity	Unspecified
	Type	com.sun.spot.sensorboard.peripheral.ISwitch
	Direction	inout
Static	false	
Leaf	false	
Documentation	Notifies the observers of the switches @throws Exception if observers aren't properly notified	
Ordered	false	
Unique	true	
Query	false	

public switchPressed (sw : com.sun.spot.sensorboard.peripheral.ISwitch) : void		
Parameters	sw	
	Multiplicity	Unspecified
	Type	com.sun.spot.sensorboard.peripheral.ISwitch
	Direction	inout
Static	false	
Leaf	false	
Documentation	Notifies the observers that the switch was pressed @param sw ISwitch that was pressed	
Ordered	false	
Unique	true	
Query	false	

public switchReleased (sw : com.sun.spot.sensorboard.peripheral.ISwitch) : void		
Parameters	sw	
	Multiplicity	Unspecified
	Type	com.sun.spot.sensorboard.peripheral.ISwitch
	Direction	inout
Static	false	
Leaf	false	
Documentation	Notifies the observers that the switch was released. @param sw the ISwitch that was released.	
Ordered	false	
Unique	true	
Query	false	

Relationships

Unamed Association		
To (switchmanager)	Name	Value
	End Model Element	SwitchManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	1
	Visibility	private
	Aggregation Kind	None
	Navigable	true
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
From	Name	Value
	End Model Element	JETTQManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	private
	Aggregation Kind	None
	Navigable	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
From	Name	Value
	End Model Element	SwitchManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	private
	Aggregation Kind	None
	Navigable	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\Switch\SwitchManager.java	
Description	Source
Type	File

ISwitchObserver

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Stereotypes	Interface
Documentation	Interface for a switch observer @author JETTQ [jettq@wpi.edu]

Operations

public update (updatedSwitch : com.sun.spot.sensorboard.peripheral.ISwitch) : void		
Parameters	**updatedSwitch**	
	Multiplicity	Unspecified
	Type	com.sun.spot.sensorboard.peripheral.ISwitch
	Direction	inout
Static	false	
Leaf	false	
Documentation	Update is called on any registered observers when the SwitchManager registers a change on the observed switch. @param updatedSwitch The ISwitch object that has changed @throws Exception If there are any errors updating the observer	
Ordered	false	
Unique	true	
Query	false	

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\Switch\ISwitchObserver.java	
Description	Source
Type	File

JETTQManager

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Documentation	Main class of the JETTQ framework. The majority of the SPOT's functionality can be accessed through this. It also holds managers for the LED, Radio, Switch, and Accelerometer components. @author JETTQ [jettq@wpi.edu] @date 09-28-08 CS4233-Team Project

Attributes

private jm : JETTQManager			
Initial Value	new JETTQManager()		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

package edb : com.sun.spot.sensorboard.EDemoBoard			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

package ispot : com.sun.spot.peripheral.ISpot			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private DEBUG : boolean			
Initial Value	true		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private am : AccelerometerManager			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private ledm : LEDManager			
Documentation	private IOManager iom;		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private rm : RadioManager			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private sm : SwitchManager			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private version : String			
Initial Value	"1.2.11.0.0"		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Operations

private JETTQManager ()	
Static	false
Leaf	false
Documentation	Private Constructor
Ordered	false
Unique	true
Query	false

public getInstance () : JETTQManager	
Static	false
Leaf	false
Documentation	Function retrieves the JETTQ Framework Manager @return JETTQManager object for the Framework
Ordered	false
Unique	true
Query	false

public getVersion () : String	
Static	false
Leaf	false
Documentation	Function returns the version number of the Framework @return String representing the Framework version
Ordered	false
Unique	true
Query	false

public registerAccelerometerObserver (iao : IAccelerometerObserver) : void		
Parameters	iao	
	Multiplicity	Unspecified
	Type	IAccelerometerObserver
	Direction	inout
Static	false	
Leaf	false	
Documentation	Registers an observer for the accelerometer. @param iao an IAccelerometerObserver to register	
Ordered	false	
Unique	true	
Query	false	

public getAccelerometerManager () : AccelerometerManager	
Static	false
Leaf	false
Documentation	Function retrieves the Accelerometer Manager @return AccelerometerManager object
Ordered	false
Unique	true
Query	false

private addTriColorLEDsToLEDManager () : void	
Static	false
Leaf	false
Documentation	Function converts the array of ITriColorLEDs to ILEDs and places them in the LEDManager
Ordered	false
Unique	true
Query	false

public getLEDManager () : LEDManager	
Static	false
Leaf	false
Documentation	Function retrieves the LED Manager @return LEDManager object
Ordered	false
Unique	true
Query	false

public turnLEDsOn () : void	
Static	false
Leaf	false
Documentation	Turns on all LEDs
Ordered	false
Unique	true
Query	false

public turnLEDsOff () : void	
Static	false
Leaf	false
Documentation	Turns off all LEDs
Ordered	false
Unique	true
Query	false

public setLEDsRGBColor (r : int, g : int, b : int) : void		
Parameters	r	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	g	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
	b	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Sets the color of all LEDs to an RGB value @param r the amount of red @param g the amount of green @param b the amount of blue	
Ordered	false	
Unique	true	
Query	false	

public getIEEEAddress () : String	
Static	false
Leaf	false
Documentation	Gets the IEEE address of the SPOT's radio @return String that represents the IEEE address.
Ordered	false
Unique	true
Query	false

public getRadioManager () : RadioManager	
Static	false
Leaf	false
Documentation	Function retrieves the Radio Manager @return RadioManager object
Ordered	false
Unique	true
Query	false

public broadcast (str : String, port : int) : void		
Parameters	**str**	
	Multiplicity	Unspecified
	Type	String
	Direction	inout
	port	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Broadcasts a string on a specified port @param str String you want to send @param port Port you want to send on	
Ordered	false	
Unique	true	
Query	false	

public broadcast (str : String) : void		
Parameters	**str**	
	Multiplicity	Unspecified
	Type	String
	Direction	inout
Static	false	
Leaf	false	
Documentation	Broadcasts a string on the default port @param str String you want to send	
Ordered	false	
Unique	true	
Query	false	

public registerRadiogramListener (rgl : IRadiogramObserver, portNumber : int) : void		
Parameters	rgl	
	Multiplicity	Unspecified
	Type	IRadiogramObserver
	Direction	inout
	portNumber	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Registers a listener to the GramRadio @param rgl IRadiogramObserver to register @param portNumber Port to listen on	
Ordered	false	
Unique	true	
Query	false	

public getSwitchManager () : SwitchManager	
Static	false
Leaf	false
Documentation	Get the switch manager @return SwitchManager object
Ordered	false
Unique	true
Query	false

public registerSwitchObserver (iso : ISwitchObserver) : void		
Parameters	iso	
	Multiplicity	Unspecified
	Type	ISwitchObserver
	Direction	inout
Static	false	
Leaf	false	
Documentation	Registers the observer for the switch	
Ordered	false	
Unique	true	
Query	false	

public decho (msg : String) : void		
Parameters	msg	
	Multiplicity	Unspecified
	Type	String
	Direction	inout
Static	false	
Leaf	false	
Documentation	Function to output given messages to standard output @param msg A String representing the message to be output.	
Ordered	false	
Unique	true	
Query	false	

public turnDebugOutputOn () : void	
Static	false
Leaf	false
Documentation	Function turns on the Debug output function
Ordered	false
Unique	true
Query	false

public turnDebugOutputOff () : void	
Static	false
Leaf	false
Documentation	Function turns off the Debug output function
Ordered	false
Unique	true
Query	false

public pause (time : long) : void		
Parameters	time	
	Multiplicity	Unspecified
	Type	long
	Direction	inout
Static	false	
Leaf	false	
Documentation	Pause for a specified time. @param time the number of milliseconds to pause	
Ordered	false	
Unique	true	
Query	false	

public run () : void	
Static	false
Leaf	false
Documentation	Easter Egg :p
Ordered	false
Unique	true
Query	false

Relationships

Unamed Association		
To (jm)	Name	Value
	End Model Element	JETTQManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	1
	Visibility	private
	Aggregation Kind	None
	Navigable	true
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
To (am)	Name	Value
	End Model Element	AccelerometerManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	1
	Visibility	private
	Aggregation Kind	None
	Navigable	true
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
To (ledm)	Name	Value
	End Model Element	LEDManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	1
	Visibility	private
	Aggregation Kind	None
	Navigable	true
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
To (rm)	Name	Value
	End Model Element	RadioManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	1
	Visibility	private
	Aggregation Kind	None
	Navigable	true
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
To (sm)	**Name**	**Value**
	End Model Element	SwitchManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	1
	Visibility	private
	Aggregation Kind	None
	Navigable	true
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
From	**Name**	**Value**
	End Model Element	JETTQManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	private
	Aggregation Kind	None
	Navigable	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\JETTQManager.java	
Description	Source
Type	File

Accelerometer

Name	Value
Abstract	false
Leaf	false
Root	false
Visibility	public

Children

Name	Documentation
AccelerometerManager	Manager class for the SPOT's accelerometer. @author JETTQ [jettq@wpi.edu] @date 09-28-08
IAccelerometerObserver	Observer interface for the SPOT's accelerometer @author JETTQ [jettq@wpi.edu] @date 10-10-08

AccelerometerManager

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Documentation	Manager class for the SPOT's accelerometer. @author JETTQ [jettq@wpi.edu] @date 09-28-08

Attributes

private accelerometermanager : AccelerometerManager			
Initial Value	new AccelerometerManager()		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private DEFAULT_NOTIFICATION_INTERVAL : int			
Initial Value	500		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private MINIMUM_NOTIFICATION_INTERVAL : int			
Documentation	500 milliseconds = 0.5 seconds		
Initial Value	5		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private accelerometer : com.sun.spot.sensorboard.peripheral.IAccelerometer3D			
Documentation	5 milliseconds		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private notificationInterval : int			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

protected accelThread : Thread			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private accelerometerObservers : java.util.Vector			
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Operations

private AccelerometerManager ()	
Static	false
Leaf	false
Documentation	Private Constructor
Ordered	false
Unique	true
Query	false

public getInstance () : AccelerometerManager	
Static	false
Leaf	false
Documentation	Get this instance of the AccelerometerManager @return AccelerometerManager
Ordered	false
Unique	true
Query	false

public configureInstance (ia3d : com.sun.spot.sensorboard.peripheral.IAccelerometer3D) : AccelerometerManager		
Parameters	ia3d	
	Multiplicity	Unspecified
	Type	com.sun.spot.sensorboard.peripheral.IAccelerometer3D
	Direction	inout
Static	false	
Leaf	false	
Documentation	Configures the Accelerometer manager with the specified IAccelerometer3D @param ia3d the IAccelerometer3D for the manager to use @return AccelerometerManager configured to the IAccelerometer3D	
Ordered	false	
Unique	true	
Query	false	

public getAccelerometer () : com.sun.spot.sensorboard.peripheral.IAccelerometer3D	
Static	false
Leaf	false
Documentation	Function retrieves the accelerometer @return IAccelerometer3D object representing the Accelerometer
Ordered	false
Unique	true
Query	false

public registerObserver (iao : IAccelerometerObserver) : void		
Parameters	iao	
	Multiplicity	Unspecified
	Type	IAccelerometerObserver
	Direction	inout
Static	false	
Leaf	false	
Documentation	Registers the observer for the accelerometer	
Ordered	false	
Unique	true	
Query	false	

public removeObserver (iao : IAccelerometerObserver) : void		
Parameters	iao	
	Multiplicity	Unspecified
	Type	IAccelerometerObserver
	Direction	inout
Static	false	
Leaf	false	
Documentation	Removes the observer for the accelerometer @param iao the accelerometer observer to be removed	
Ordered	false	
Unique	true	
Query	false	

public getNotificationInterval () : int	
Static	false
Leaf	false
Documentation	Retrieves the notification interval @return the notification interval
Ordered	false
Unique	true
Query	false

public setNotificationInterval (ni : int) : void		
Parameters	ni	
	Multiplicity	Unspecified
	Type	int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Sets the notification interval @param ni the desired notification interval	
Ordered	false	
Unique	true	
Query	false	

private runScheduledNotify () : void	
Static	false
Leaf	false
Documentation	Begins the scheduled notifications to the observers
Ordered	false
Unique	true
Query	false

public notifyObservers () : void	
Static	false
Leaf	false
Documentation	Notifies the observers of the accelerometer object @throws Exception if observers aren't properly notified
Ordered	false
Unique	true
Query	false

Relationships

Unamed Association		
To (accelerometermanager)	Name	Value
	End Model Element	AccelerometerManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	1
	Visibility	private
	Aggregation Kind	None
	Navigable	true
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
From	Name	Value
	End Model Element	JETTQManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	private
	Aggregation Kind	None
	Navigable	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unamed Association		
From	Name	Value
	End Model Element	AccelerometerManager
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	private
	Aggregation Kind	None
	Navigable	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\Accelerometer\AccelerometerManager.java	
Description	Source
Type	File

IAccelerometerObserver

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Stereotypes	Interface
Documentation	Observer interface for the SPOT's accelerometer @author JETTQ [jettq@wpi.edu] @date 10-10-08

Operations

public update (ia3d : com.sun.spot.sensorboard.peripheral.IAccelerometer3D) : void		
Parameters	**ia3d**	
	Multiplicity	Unspecified
	Type	com.sun.spot.sensorboard.peripheral.IAccelerometer3D
	Direction	inout
Static	false	
Leaf	false	
Documentation	Update is called on any registered observers when the AccelerometerManager polls the accelerometer. @param ia3d Passes the updated IAccerometer3D to the observer	
Ordered	false	
Unique	true	
Query	false	

References

C:\Documents and Settings\Jason Codding\new_workspace\JETTQ\FRAMEWORK\JETTQ\Accelerometer\IAccelerometerObserver.java	
Description	Source
Type	File