VisualCube1e3

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VisualCube Inc. 2009

Package

processing.visualcube1e3.device

processing.visualcube1e3.device
Class VisualCubeCommunication

```
java.lang.Object
    │
    +-processing.visualcube1e3.device.VisualCubeCommunication
```

public class **VisualCubeCommunication**
extends Object

Communicate with a VisualCube1e3 device via XML-RPC. Interface is exact mapping of hardware functions.

Constructor Summary

public	VisualCubeCommunication(String url) Initialize communication

Method Summary

String	getDeviceInfo() Get displayable API/device version banner.
String	getDeviceStatusReport(int attributes) Analyze device components depending on flags.
boolean	resetDevice(int flags) Reset device according to flags.
boolean	setDeviceControlFlags(int flags) Set control flags or execute function (eg.
void	updateDisplay(int maxFps, VisualCubeConstants.Voxel[] frame) Update frame asynchronously that means function creates a worker thread and returns instantly.

Methods inherited from class java.lang.Object

equals, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructors

VisualCubeCommunication

public **VisualCubeCommunication**(String url)

Initialize communication

Parameters:
    url - The device to connect to identified by network id

Throws:
    VisualCubeException

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Methods

getDeviceInfo

```
public String getDeviceInfo()
  throws VisualCubeException
```

Get displayable API/device version banner.

>   **Returns:**
>   String containing version string

>   **Throws:**
>   VisualCubeException

---

getDeviceStatusReport

```
public String getDeviceStatusReport(int attributes)
  throws VisualCubeException
```

Analyze device components depending on flags.

>   **Parameters:**
>   attributes - flags

>   **Returns:**
>   result corresponding to given flag

>   **Throws:**
>   VisualCubeException

---

setDeviceControlFlags

```
public boolean setDeviceControlFlags(int flags)
  throws VisualCubeException
```

Set control flags or execute function (eg. put-down-display, ignore-fps-delimiter, reset-voxels, reset-sub-ctrl, highspeed-mode etc.).

>   **Parameters:**
>   flags - control flags

>   **Returns:**
>   true iff successful

>   **Throws:**
>   VisualCubeException

---

resetDevice

```
public boolean resetDevice(int flags)
  throws VisualCubeException
```

Reset device according to flags.

>   **Parameters:**
>   flags - flags describing what to reset

>   **Returns:**

true iff successful

Throws:
VisualCubeException

updateDisplay

```
public void updateDisplay(int maxFps,
         VisualCubeConstants.Voxel[] frame)
   throws VisualCubeException
```

Update frame asynchronously that means function creates a worker thread and returns instantly.

Parameters:
maxFps - maximum frames per seconds to allow updates
frame - array of color information for voxels to update

Throws:
VisualCubeException

processing.visualcube1e3.device
Class VisualCubeConstants

```
java.lang.Object
  │
  +-processing.visualcube1e3.device.VisualCubeConstants
```

public class **VisualCubeConstants**
extends Object

Constants and types concerning a VisualCube1e3 device.

Nested Class Summary

class	[VisualCubeConstants.MESSAGE](#) VisualCubeConstants.MESSAGE
class	[VisualCubeConstants.RESULT](#) VisualCubeConstants.RESULT
class	[VisualCubeConstants.Voxel](#) VisualCubeConstants.Voxel

Field Summary

public static final	[COLORS](#) Number of available colors => range [0, 255] Value: **256**
public static final	[DEPTH](#) Number of LEDs on X axis Value: **10**
public static final	[FRAME_SIZE](#) Number of voxels per frame Value: **1000**
public static final	[FRAMERATE](#) Number of frames per second Value: **10**
public static final	[HEIGHT](#) Number of LEDs on X axis Value: **10**
public static final	[VERSION](#) Version information as to be expected (and as supported), length <= RX_MESSAGE_DATA_SIZE / 2 - 1 Value: **VisualCube1e3 v1.0** **Main Controller Firmware v1.0** **Sub Controller Firmware v1.0**

public static final	WIDTH
	Number of LEDs on X axis
	Value: **10**

Constructor Summary

public	VisualCubeConstants()

Methods inherited from class `java.lang.Object`

equals, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Fields

VERSION

public static final java.lang.String **VERSION**

Version information as to be expected (and as supported), length <= RX_MESSAGE_DATA_SIZE / 2 - 1
Constant value: **VisualCube1e3 v1.0**
Main Controller Firmware v1.0
Sub Controller Firmware v1.0

WIDTH

public static final int **WIDTH**

Number of LEDs on X axis
Constant value: **10**

HEIGHT

public static final int **HEIGHT**

Number of LEDs on X axis
Constant value: **10**

DEPTH

public static final int **DEPTH**

Number of LEDs on X axis
Constant value: **10**

COLORS

public static final int **COLORS**

Number of available colors => range [0, 255]
Constant value: **256**

FRAME_SIZE

public static final int **FRAME_SIZE**

Number of voxels per frame

Constant value: **1000**

FRAMERATE

```
public static final int FRAMERATE
```

Number of frames per second
Constant value: **10**

Constructors

VisualCubeConstants

```
public VisualCubeConstants()
```

FRAMERATE

```
public static final int FRAMERATE
```

processing.visualcube1e3.device
Class VisualCubeConstants.MESSAGE

```
java.lang.Object
    │
    +-java.lang.Enum
        │
        +-processing.visualcube1e3.device.VisualCubeConstants.MESSAGE
```

All Implemented Interfaces:
Serializable, Comparable

---

public static final class **VisualCubeConstants.MESSAGE**
extends Enum

RPC Message IDs

Field Summary

public static final	GETDEVICEINFO
public static final	GETDEVICESTATUSREPORT
public static final	GETVOXELSTATUS
public static final	GETVOXELSTATUSBYLOGICPOSITION
public	id ID representing RPC message
public static final	RESETDEVICE
public static final	SETDEVICECONTROLFLAGS
public static final	SETSUBCONTROLLERLED
public static final	SETVOXEL
public static final	SETVOXELBYLOGICPOSITION
public static final	UPDATEDISPLAY

Method Summary

static VisualCubeConstants.MESSAGE	valueOf(String name)
static VisualCubeConstants.MESSAGE[]	values()

Methods inherited from class `java.lang.Enum`

`compareTo, equals, getDeclaringClass, hashCode, name, ordinal, toString, valueOf`

Methods inherited from class `java.lang.Object`

`equals, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait`

Methods inherited from interface `java.lang.Comparable`

`compareTo`

Fields

GETDEVICEINFO

`public static final processing.visualcube1e3.device.VisualCubeConstants.MESSAGE` **`GETDEVICEINFO`**

GETDEVICESTATUSREPORT

`public static final processing.visualcube1e3.device.VisualCubeConstants.MESSAGE` **`GETDEVICESTATUSREPORT`**

SETDEVICECONTROLFLAGS

`public static final processing.visualcube1e3.device.VisualCubeConstants.MESSAGE` **`SETDEVICECONTROLFLAGS`**

RESETDEVICE

`public static final processing.visualcube1e3.device.VisualCubeConstants.MESSAGE` **`RESETDEVICE`**

UPDATEDISPLAY

`public static final processing.visualcube1e3.device.VisualCubeConstants.MESSAGE` **`UPDATEDISPLAY`**

SETVOXELBYLOGICPOSITION

`public static final processing.visualcube1e3.device.VisualCubeConstants.MESSAGE` **`SETVOXELBYLOGICPOSITION`**

SETVOXEL

```
public static final processing.visualcube1e3.device.VisualCubeConstants.MESSAGE
SETVOXEL
```

GETVOXELSTATUSBYLOGICPOSITION

```
public static final processing.visualcube1e3.device.VisualCubeConstants.MESSAGE
GETVOXELSTATUSBYLOGICPOSITION
```

GETVOXELSTATUS

```
public static final processing.visualcube1e3.device.VisualCubeConstants.MESSAGE
GETVOXELSTATUS
```

SETSUBCONTROLLERLED

```
public static final processing.visualcube1e3.device.VisualCubeConstants.MESSAGE
SETSUBCONTROLLERLED
```

id

```
public java.lang.String id
```

ID representing RPC message

Methods

values

```
public final static VisualCubeConstants.MESSAGE[] values()
```

valueOf

```
public static VisualCubeConstants.MESSAGE valueOf(String name)
```

processing.visualcube1e3.device
Class VisualCubeConstants.RESULT

```
java.lang.Object
    |
    +-java.lang.Enum
         |
         +-processing.visualcube1e3.device.VisualCubeConstants.RESULT
```

All Implemented Interfaces:
Serializable, Comparable

---

public static final class **VisualCubeConstants.RESULT**
extends Enum

RPC Status IDs

Field Summary

public static final	ERROR
public	nr ID representing RPC status
public static final	SUCCESS

Method Summary

static VisualCubeConstants.RESULT	valueOf(String name)
static VisualCubeConstants.RESULT[]	values()

Methods inherited from class `java.lang.Enum`

compareTo, equals, getDeclaringClass, hashCode, name, ordinal, toString, valueOf

Methods inherited from class `java.lang.Object`

equals, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Methods inherited from interface `java.lang.Comparable`

compareTo

Fields

SUCCESS

```
public static final processing.visualcube1e3.device.VisualCubeConstants.RESULT SUCCESS
```

ERROR

`public static final processing.visualcube1e3.device.VisualCubeConstants.RESULT` **ERROR**

nr

`public int` **nr**

ID representing RPC status

Methods

values

`public final static` VisualCubeConstants.RESULT[] **values**()

valueOf

`public static` VisualCubeConstants.RESULT **valueOf**(String name)

processing.visualcube1e3.device
Class VisualCubeConstants.Voxel

```
java.lang.Object
   |
   +-processing.visualcube1e3.device.VisualCubeConstants.Voxel
```

public static class **VisualCubeConstants.Voxel**
extends Object

Field Summary

public	[blue](#)
public	[green](#)
public	[red](#)

Constructor Summary

public	[VisualCubeConstants.Voxel](#)()

Methods inherited from class `java.lang.Object`

equals, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Fields

red

`public int **red**`

green

`public int **green**`

blue

`public int **blue**`

Constructors

VisualCubeConstants.Voxel

```
public VisualCubeConstants.Voxel()
```

VisualCubeConstants.Voxel

```
public VisualCubeConstants.Voxel()
```

processing.visualcube1e3.device
Class VisualCubeDemo

```
java.lang.Object
   │
   +-processing.visualcube1e3.device.VisualCubeDemo
```

public class **VisualCubeDemo**
extends Object

This class provides a stand-alone test for VisualCube.

Constructor Summary

public	[VisualCubeDemo](#)()

Method Summary

static void	[main](#)(String[] args)

Methods inherited from class java.lang.Object

equals, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

Constructors

VisualCubeDemo

public **VisualCubeDemo**()

Methods

main

public static void **main**(String[] args)

processing.visualcube1e3.device
Class VisualCubeException

```
java.lang.Object
    │
    +-java.lang.Throwable
        │
        +-java.lang.Exception
            │
            +-java.io.IOException
                │
                +-processing.visualcube1e3.device.VisualCubeException
```

All Implemented Interfaces:
Serializable

---

public class **VisualCubeException**
extends IOException

Exceptions throwable by a VisualCube1e3 device.

Constructor Summary

public	[VisualCubeException](#)()
public	[VisualCubeException](#)(String msg)

Methods inherited from class `java.lang.Throwable`

fillInStackTrace, getCause, getLocalizedMessage, getMessage, getStackTrace, initCause, printStackTrace, printStackTrace, printStackTrace, setStackTrace, toString

Methods inherited from class `java.lang.Object`

equals, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

---

Constructors

VisualCubeException

public **VisualCubeException**()

VisualCubeException

public **VisualCubeException**(String msg)

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