VitalJacket® SDK

VitalJacket SDK v1.0.07 – BioLib.dll

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ATENTION: Although VitalJacket is a certified medical device, its developer version is NOT certified for diagnosis usage. It is intended for R&D and development purposes only. Users of VJ SDK can submit their final developments to medical certification. All contents of our product are compliant with the European Medical Device directive 93/42/EEC but, being a developer's version, it's not certified.

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Content

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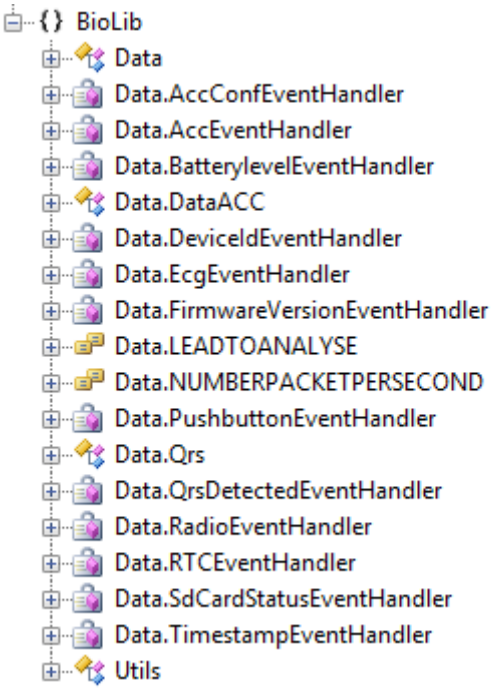
BioLib library



public class **Data**
Member of **BioLib**

public class **DataACC**
Member of **BioLib.Data**

Summary:
Accelerometer data.

public class **Qrs**
Member of **BioLib.Data**

Summary:
Qrs data.

public class **Utils**
Member of **BioLib**

Summary:
Utils functions.

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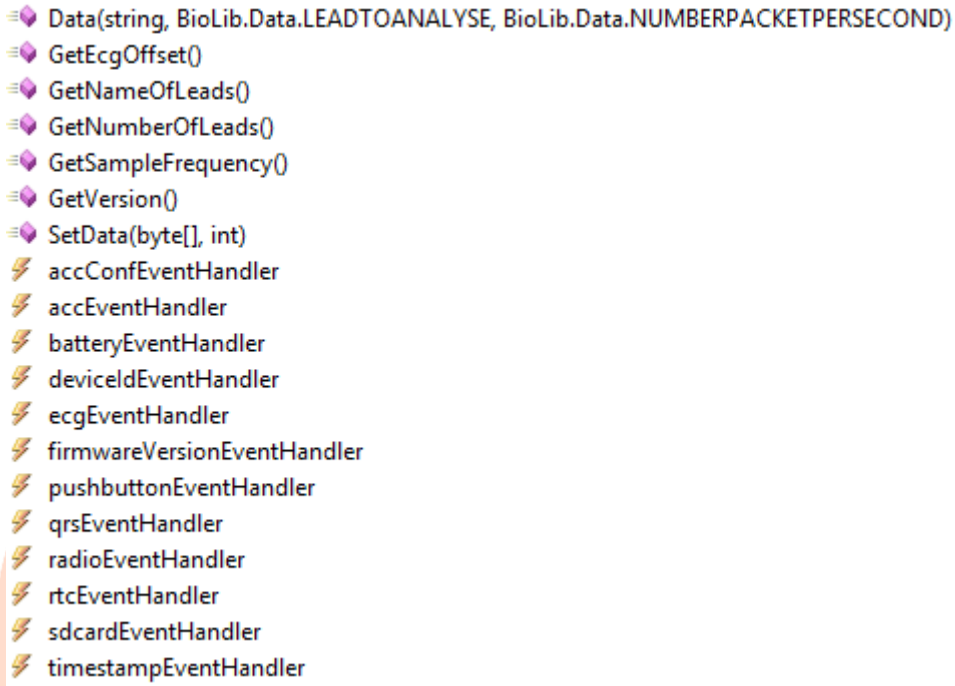
Class: data parser



Methods

public **Data**(**string** *applicationPath*, **BioLib.Data.LEADTOANALYSE** *lead*, **BioLib.Data.NUMBERPACKETPERSECOND** *nPacket*)
Member of **BioLib.Data**

Summary:
Constructor.

Parameters:
applicationPath: Application path
lead: lead use to detect QRS
nPacket: number of packet ECG per second (1 – 500 samples ECG / sec., 5 – 100 samples ECG / sec. or 10 – 50 samples ECG / sec.)

public **System.Collections.Generic.List<string>** **GetNameOfLeads**()
Member of **BioLib.Data**

Summary:
Get name of leads.

Returns:
Name(s) of lead(s)

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public **int GetNumberOfLeads**()
Member of **BioLib.Data**

Summary:
Get number of leads.

Returns:
Number of leads

public **int GetSampleFrequency**()
Member of **BioLib.Data**

Summary:
Get ECG sample frequency.

Returns:
ECG sample frequency (Hz)

public **bool SetData**(**byte[]** *data*, **int** *nBytes*)
Member of **BioLib.Data**

Summary:
Set data to parser.

Parameters:
data: Data to parser
nBytes: Number of bytes in buffer

Returns:
True, if no errors occurred

public **string GetVersion**()
Member of **BioLib.Data**

Summary:
Get BioLib library version.

Returns:
Version of library.

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Events

public event **BioLib.Data.AccEventHandler accEventHandler**
Member of **BioLib.Data**

public event **BioLib.Data.BatterylevelEventHandler batteryEventHandler**
Member of **BioLib.Data**

public event **BioLib.Data.DeviceIdEventHandler deviceIdEventHandler**
Member of **BioLib.Data**

public event **BioLib.Data.EcgEventHandler ecgEventHandler**
Member of **BioLib.Data**

public event **BioLib.Data.PushbuttonEventHandler pushbuttonEventHandler**
Member of **BioLib.Data**

public event **BioLib.Data.QrsDetectedEventHandler qrsEventHandler**
Member of **BioLib.Data**

QRS detector is based on the algorithm of Pan and Tompkins [1] and was used MIT-BIH database for validate results [2].

public event **BioLib.Data.RadioEventHandler radioEventHandler**
Member of **BioLib.Data**

public event **BioLib.Data.RTCEventHandler rtcEventHandler**
Member of **BioLib.Data**

public event **BioLib.Data.SdCardStatusEventHandler sdcardEventHandler**
Member of **BioLib.Data**

public event **BioLib.Data.TimestampEventHandler timestampEventHandler**
Member of **BioLib.Data**

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public event **BioLib.Data.FirmwareVersionEventHandler** **firmwareVersionEventHandler**
Member of **BioLib**.**Data**

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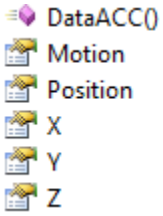
Class: accelerometer data



public class **DataACC**
Member of **BioLib.Data**

Summary:
Tri-axial accelerometer data (X,Y,Z).

public **int** **Position** { set; get; }
Member of **BioLib.Data.DataACC**

Summary:
Position in ecg samples offset.

public **sbyte** **X** { set; get; }
Member of **BioLib.Data.DataACC**

Summary:
Axis xx.

public **sbyte** **Y** { set; get; }
Member of **BioLib.Data.DataACC**

Summary:
Axis yy.

public **sbyte** **Z** { set; get; }
Member of **BioLib.Data.DataACC**

Summary:
Axis zz.

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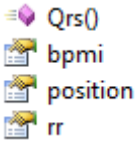
Class: Qrs data



public class **Qrs**
Member of **BioLib.Data**

Summary:
Qrs data.

public **short** **bpmi** { set; get; }
Member of **BioLib.Data.Qrs**

Summary:
Bpm instantaneous (bpm).

public **int** **position** { set; get; }
Member of **BioLib.Data.Qrs**

Summary:
Qrs position (samples offset).

public **int** **rr** { set; get; }
Member of **BioLib.Data.Qrs**

Summary:
Beat-by-beat R-R (ms).

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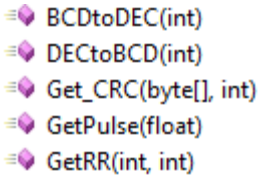
Class: utils



Functions

public static **int** **BCDtoDEC**(**int** *bcdValue*)
Member of **BioLib.Utils**

Summary:
Convert BCD format in Decimal format.

Parameters:
bcdValue: BCD value

public static **byte** **DECtoBCD**(**int** *value*)
Member of **BioLib.Utils**

Summary:
Convert decimal format in BCD format.

Parameters:
value: decimal value

public static **byte** **Get_CRC**(**byte[]** *data*, **int** *nBytes*)
Member of **BioLib.Utils**

Summary:
Calculate CRC of stream data (send to device).

Parameters:
data: stream data
nBytes: number of bytes of stream

Returns:
value CRC

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public static **float** **GetPulse**(**float** *rr*)
Member of **BioLib.Utils**

Summary:
Get BPM instantaneous (bpm).

Parameters:
rr: R-R (ms)

public static **float** **GetRR**(**int** *rr*, **int** *SampleFrequency*)
Member of **BioLib.Utils**

Summary:
Get R-R (ms).

Parameters:
rr: R-R (samples)
SampleFrequency: Sample Frequency (Hz)

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References

[1] Pan J and Tompkins WJ. A Real-Time QRS Detection Algorithm. IEEE Transactions on Biomedical Engineering 32(3):230-236, 1985

[2] MIT-BIH Arrhythmia Database: http://www.physionet.org/physiobank/database/mitdb/

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Control versions

Version	Date	Change log
1.0.02	30-04-2013	*Get device ID*
		Send radio event to device
1.0.03	19-07-2013	*New method to send radio-event to device*
		A new too l(InfoExporter.exe) for export data to Excel and Matlab
1.0.07	18-03-2015	*Get firmware version from device VitalJacket.*

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