

BluetoothPositioning

Generato da Doxygen 1.8.12

Indice

1	Indice dei namespace	2
1.1	Package	2
2	Indice della gerarchia	2
2.1	Gerarchia delle classi	2
3	Indice dei tipi composti	4
3.1	Elenco dei tipi composti	4
4	Indice dei file	5
4.1	Elenco dei file	5
5	Documentazione dei namespace	6
5.1	Package it	6
5.2	Package it.unibo	7
5.3	Package it.unibo.torsello	7
5.4	Package it.unibo.torsello.bluetoothpositioning	7
5.5	Package it.unibo.torsello.bluetoothpositioning.activities	7
5.6	Package it.unibo.torsello.bluetoothpositioning.adapter	7
5.7	Package it.unibo.torsello.bluetoothpositioning.constant	8
5.8	Package it.unibo.torsello.bluetoothpositioning.distanceEstimation	8
5.9	Package it.unibo.torsello.bluetoothpositioning.extra	8
5.10	Package it.unibo.torsello.bluetoothpositioning.filters	8
5.11	Package it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter	8
5.12	Package it.unibo.torsello.bluetoothpositioning.fragment	8
5.13	Package it.unibo.torsello.bluetoothpositioning.model	9
5.14	Package it.unibo.torsello.bluetoothpositioning.observables	9
5.15	Package it.unibo.torsello.bluetoothpositioning.task	9
5.16	Package it.unibo.torsello.bluetoothpositioning.util	9

6 Documentazione delle classi	9
6.1 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity</code>	10
6.1.1 Descrizione dettagliata	12
6.1.2 Documentazione delle funzioni membro	12
6.1.3 Documentazione dei membri dato	17
6.2 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment</code>	18
6.2.1 Descrizione dettagliata	19
6.2.2 Documentazione delle funzioni membro	19
6.2.3 Documentazione dei membri dato	21
6.3 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil</code>	22
6.3.1 Descrizione dettagliata	24
6.3.2 Documentazione dei costruttori e dei distruttori	24
6.3.3 Documentazione delle funzioni membro	24
6.3.4 Documentazione dei membri dato	28
6.4 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.util.ChartUtil</code>	30
6.4.1 Descrizione dettagliata	31
6.4.2 Documentazione dei costruttori e dei distruttori	32
6.4.3 Documentazione delle funzioni membro	32
6.4.4 Documentazione dei membri dato	35
6.5 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.model.Device</code>	36
6.5.1 Descrizione dettagliata	37
6.5.2 Documentazione dei costruttori e dei distruttori	37
6.5.3 Documentazione delle funzioni membro	37
6.5.4 Documentazione dei membri dato	40
6.6 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter</code>	41
6.6.1 Descrizione dettagliata	42
6.6.2 Documentazione dei costruttori e dei distruttori	42
6.6.3 Documentazione delle funzioni membro	42
6.6.4 Documentazione dei membri dato	45
6.7 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment</code>	46

6.7.1	Descrizione dettagliata	48
6.7.2	Documentazione delle funzioni membro	48
6.7.3	Documentazione dei membri dato	50
6.8	Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants</code>	52
6.8.1	Descrizione dettagliata	53
6.8.2	Documentazione delle funzioni membro	53
6.8.3	Documentazione dei membri dato	53
6.9	Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment</code>	54
6.9.1	Descrizione dettagliata	56
6.9.2	Documentazione delle funzioni membro	56
6.9.3	Documentazione dei membri dato	57
6.10	Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment</code>	58
6.10.1	Descrizione dettagliata	59
6.10.2	Documentazione delle funzioni membro	60
6.10.3	Documentazione dei membri dato	62
6.11	Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment</code>	64
6.11.1	Descrizione dettagliata	65
6.11.2	Documentazione delle funzioni membro	65
6.11.3	Documentazione dei membri dato	67
6.12	Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment</code>	68
6.12.1	Descrizione dettagliata	70
6.12.2	Documentazione delle funzioni membro	70
6.12.3	Documentazione dei membri dato	71
6.13	Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment</code>	72
6.13.1	Descrizione dettagliata	73
6.13.2	Documentazione delle funzioni membro	73
6.13.3	Documentazione dei membri dato	74
6.14	Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment</code>	75
6.14.1	Descrizione dettagliata	76
6.14.2	Documentazione delle funzioni membro	76

6.14.3 Documentazione dei membri dato	77
6.15 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment</code>	77
6.15.1 Descrizione dettagliata	78
6.15.2 Documentazione delle funzioni membro	79
6.15.3 Documentazione dei membri dato	80
6.16 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.observable.DeviceObservable</code>	81
6.16.1 Descrizione dettagliata	82
6.16.2 Documentazione dei costruttori e dei distruttori	82
6.16.3 Documentazione delle funzioni membro	83
6.16.4 Documentazione dei membri dato	83
6.17 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter</code> .↔ <code>DeviceViewHolder</code>	84
6.17.1 Documentazione dei costruttori e dei distruttori	85
6.17.2 Documentazione dei membri dato	86
6.18 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation</code>	88
6.18.1 Descrizione dettagliata	89
6.18.2 Documentazione dei costruttori e dei distruttori	89
6.18.3 Documentazione delle funzioni membro	90
6.18.4 Documentazione dei membri dato	92
6.19 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.extra.FABBehavior</code>	93
6.19.1 Descrizione dettagliata	94
6.19.2 Documentazione dei costruttori e dei distruttori	94
6.19.3 Documentazione delle funzioni membro	94
6.20 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter</code>	95
6.20.1 Descrizione dettagliata	96
6.20.2 Documentazione dei costruttori e dei distruttori	96
6.20.3 Documentazione delle funzioni membro	97
6.20.4 Documentazione dei membri dato	98
6.21 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder</code> . . .	100
6.21.1 Descrizione dettagliata	101
6.21.2 Documentazione delle funzioni membro	101

6.21.3 Documentazione dei membri dato	102
6.22 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.constant.KFilterConstants</code>	103
6.22.1 Descrizione dettagliata	103
6.22.2 Documentazione dei membri dato	103
6.23 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.activities.MainActivity</code>	105
6.23.1 Descrizione dettagliata	106
6.23.2 Documentazione delle funzioni membro	107
6.23.3 Documentazione dei membri dato	109
6.24 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter</code>	110
6.24.1 Descrizione dettagliata	112
6.24.2 Documentazione delle funzioni membro	112
6.24.3 Documentazione dei membri dato	113
6.25 Riferimenti per l'interfaccia <code>it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0</code> ← <code>Fragment.OnRecordingReport</code>	114
6.25.1 Documentazione delle funzioni membro	115
6.26 Riferimenti per l'interfaccia <code>it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0</code> ← <code>Fragment.OnRecordingResume</code>	115
6.26.1 Documentazione delle funzioni membro	116
6.27 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.util.ReportUtils</code>	116
6.27.1 Descrizione dettagliata	117
6.27.2 Documentazione dei costruttori e dei distruttori	118
6.27.3 Documentazione delle funzioni membro	118
6.27.4 Documentazione dei membri dato	123
6.28 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.task.SaveImageTask</code>	124
6.28.1 Descrizione dettagliata	125
6.28.2 Documentazione dei costruttori e dei distruttori	126
6.28.3 Documentazione delle funzioni membro	126
6.28.4 Documentazione dei membri dato	127
6.29 Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.constant.SettingConstants</code>	127
6.29.1 Descrizione dettagliata	128
6.29.2 Documentazione dei membri dato	128

6.30	Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment</code>	129
6.30.1	Descrizione dettagliata	131
6.30.2	Documentazione delle funzioni membro	131
6.30.3	Documentazione dei membri dato	134
6.31	Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.adapter.StatePagerAdapter</code>	135
6.31.1	Descrizione dettagliata	136
6.31.2	Documentazione dei costruttori e dei distruttori	137
6.31.3	Documentazione delle funzioni membro	137
6.31.4	Documentazione dei membri dato	137
6.32	Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment</code>	138
6.32.1	Descrizione dettagliata	139
6.32.2	Documentazione delle funzioni membro	140
6.32.3	Documentazione dei membri dato	141
6.33	Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.observable.Observable</code> ↔	142
6.33.1	Descrizione dettagliata	143
6.33.2	Documentazione dei costruttori e dei distruttori	143
6.33.3	Documentazione delle funzioni membro	143
6.33.4	Documentazione dei membri dato	144
6.34	Riferimenti per la classe <code>it.unibo.torsello.bluetoothpositioning.util.UsbUtil</code>	144
6.34.1	Descrizione dettagliata	145
6.34.2	Documentazione dei costruttori e dei distruttori	145
6.34.3	Documentazione delle funzioni membro	145
6.34.4	Documentazione dei membri dato	147

7 Documentazione dei file	148
7.1 Riferimenti per il file <code>ApplicationActivity.java</code>	148
7.2 Riferimenti per il file <code>CameraFragment.java</code>	148
7.3 Riferimenti per il file <code>CameraPreviewUtil.java</code>	149
7.4 Riferimenti per il file <code>ChartUtil.java</code>	149
7.5 Riferimenti per il file <code>Device.java</code>	149
7.6 Riferimenti per il file <code>DeviceCardViewAdapter.java</code>	149
7.7 Riferimenti per il file <code>DeviceChartFragment.java</code>	150
7.8 Riferimenti per il file <code>DeviceConstants.java</code>	150
7.9 Riferimenti per il file <code>DeviceDetailFragment.java</code>	150
7.10 Riferimenti per il file <code>DeviceDetailInner0Fragment.java</code>	150
7.11 Riferimenti per il file <code>DeviceDetailInner1Fragment.java</code>	150
7.12 Riferimenti per il file <code>DeviceDetailInner2Fragment.java</code>	151
7.13 Riferimenti per il file <code>DeviceDetailReportFragment.java</code>	151
7.14 Riferimenti per il file <code>DeviceDetailResumeFragment.java</code>	151
7.15 Riferimenti per il file <code>DeviceListFragment.java</code>	151
7.16 Riferimenti per il file <code>DeviceObservable.java</code>	152
7.17 Riferimenti per il file <code>Estimation.java</code>	152
7.18 Riferimenti per il file <code>FABBehavior.java</code>	152
7.19 Riferimenti per il file <code>KFilter.java</code>	152
7.20 Riferimenti per il file <code>KFilterBuilder.java</code>	152
7.21 Riferimenti per il file <code>KFilterConstants.java</code>	153
7.22 Riferimenti per il file <code>MainActivity.java</code>	153
7.23 Riferimenti per il file <code>MyArmaRssiFilter.java</code>	153
7.24 Riferimenti per il file <code>ReportUtils.java</code>	153
7.25 Riferimenti per il file <code>SaveImageTask.java</code>	154
7.26 Riferimenti per il file <code>SettingConstants.java</code>	154
7.27 Riferimenti per il file <code>SettingsFragment.java</code>	154
7.28 Riferimenti per il file <code>StatePagerAdapter.java</code>	154
7.29 Riferimenti per il file <code>UsbMeasurementFragment.java</code>	154
7.30 Riferimenti per il file <code>UsbMeasurementObservable.java</code>	155
7.31 Riferimenti per il file <code>UsbUtil.java</code>	155

Indice

157

1 Indice dei namespace

1.1 Package

Questi sono i package e una loro breve descrizione (se disponibile):

it	6
it.unibo	7
it.unibo.torsello	7
it.unibo.torsello.bluetoothpositioning	7
it.unibo.torsello.bluetoothpositioning.activities	7
it.unibo.torsello.bluetoothpositioning.adapter	7
it.unibo.torsello.bluetoothpositioning.constant	8
it.unibo.torsello.bluetoothpositioning.distanceEstimation	8
it.unibo.torsello.bluetoothpositioning.extra	8
it.unibo.torsello.bluetoothpositioning.filters	8
it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter	8
it.unibo.torsello.bluetoothpositioning.fragment	8
it.unibo.torsello.bluetoothpositioning.model	9
it.unibo.torsello.bluetoothpositioning.observables	9
it.unibo.torsello.bluetoothpositioning.task	9
it.unibo.torsello.bluetoothpositioning.util	9

2 Indice della gerarchia

2.1 Gerarchia delle classi

Questo elenco di ereditarietà è ordinato approssimativamente, ma non completamente, in ordine alfabetico:

Adapter	
it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter	41
Behavior	
it.unibo.torsello.bluetoothpositioning.extra.FABBehavior	93
Callback	

it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil	22
it.unibo.torsello.bluetoothpositioning.model.Device	36
it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants	52
it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation	88
it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter	95
it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder	100
it.unibo.torsello.bluetoothpositioning.constant.KFilterConstants OnNavigationItemSelectedListener	103
it.unibo.torsello.bluetoothpositioning.activities.MainActivity	105
it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity	10
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingReport	114
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment	72
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingResume	115
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment	75
it.unibo.torsello.bluetoothpositioning.util.ReportUtils	116
it.unibo.torsello.bluetoothpositioning.constant.SettingConstants	127
it.unibo.torsello.bluetoothpositioning.util.UsbUtil ViewHolder	144
it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder AppCompatActivity	84
it.unibo.torsello.bluetoothpositioning.activities.MainActivity AsyncTask	105
it.unibo.torsello.bluetoothpositioning.task.SaveImageTask BeaconConsumer	124
it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity Fragment	10
it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment	18
it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment	46
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment	54
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment	58
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment	64
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment	68
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment	72
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment	75
it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment	77

it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment	129
it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment FragmentPagerAdapter	138
it.unibo.torsello.bluetoothpositioning.adapter.StatePagerAdapter Observable	135
it.unibo.torsello.bluetoothpositioning.observable.DeviceObservable	81
it.unibo.torsello.bluetoothpositioning.observable.UsbMeasurementObservable Observer	142
it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment	46
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment	58
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment	64
it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment	77
it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment OnChartValueSelectedListener	138
it.unibo.torsello.bluetoothpositioning.util.ChartUtil RssiFilter	30
it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter ViewGroup	110
it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil	22

3 Indice dei tipi composti

3.1 Elenco dei tipi composti

Queste sono le classi, le struct, le union e le interfacce con una loro breve descrizione:

it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity	10
it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment	18
it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil	22
it.unibo.torsello.bluetoothpositioning.util.ChartUtil	30
it.unibo.torsello.bluetoothpositioning.model.Device	36
it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter	41
it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment	46
it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants	52
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment	54
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment	58
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment	64

it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment	68
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment	72
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment	75
it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment	77
it.unibo.torsello.bluetoothpositioning.observables.DeviceObservable	81
it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder	84
it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation	88
it.unibo.torsello.bluetoothpositioning.extra.FABBehavior	93
it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter	95
it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder	100
it.unibo.torsello.bluetoothpositioning.constant.KFilterConstants	103
it.unibo.torsello.bluetoothpositioning.activities.MainActivity	105
it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter	110
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingReport	114
it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingResume	115
it.unibo.torsello.bluetoothpositioning.util.ReportUtils	116
it.unibo.torsello.bluetoothpositioning.task.SaveImageTask	124
it.unibo.torsello.bluetoothpositioning.constant.SettingConstants	127
it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment	129
it.unibo.torsello.bluetoothpositioning.adapter.StatePagerAdapter	135
it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment	138
it.unibo.torsello.bluetoothpositioning.observables.UsbMeasurementObservable	142
it.unibo.torsello.bluetoothpositioning.util.UsbUtil	144

4 Indice dei file

4.1 Elenco dei file

Questo è un elenco di tutti i file con una loro breve descrizione:

ApplicationActivity.java	148
CameraFragment.java	148
CameraPreviewUtil.java	149

ChartUtil.java	149
Device.java	149
DeviceCardViewAdapter.java	149
DeviceChartFragment.java	150
DeviceConstants.java	150
DeviceDetailFragment.java	150
DeviceDetailInner0Fragment.java	150
DeviceDetailInner1Fragment.java	150
DeviceDetailInner2Fragment.java	151
DeviceDetailReportFragment.java	151
DeviceDetailResumeFragment.java	151
DeviceListFragment.java	151
DeviceObservable.java	152
Estimation.java	152
FABBehavior.java	152
KFilter.java	152
KFilterBuilder.java	152
KFilterConstants.java	153
MainActivity.java	153
MyArmaRssiFilter.java	153
ReportUtils.java	153
SaveImageTask.java	154
SettingConstants.java	154
SettingsFragment.java	154
StatePagerAdapter.java	154
UsbMeasurementFragment.java	154
UsbMeasurementObservable.java	155
UsbUtil.java	155

5 Documentazione dei namespace

5.1 Package it

Package

- package [unibo](#)

5.2 Package it.unibo

Package

- package [torsello](#)

5.3 Package it.unibo.torsello

Package

- package [bluetoothpositioning](#)

5.4 Package it.unibo.torsello.bluetoothpositioning

Package

- package [activities](#)
- package [adapter](#)
- package [constant](#)
- package [distanceEstimation](#)
- package [extra](#)
- package [filters](#)
- package [fragment](#)
- package [model](#)
- package [observables](#)
- package [task](#)
- package [util](#)

5.5 Package it.unibo.torsello.bluetoothpositioning.activities

Composti

- class [ApplicationActivity](#)
- class [MainActivity](#)

5.6 Package it.unibo.torsello.bluetoothpositioning.adapter

Composti

- class [DeviceCardViewAdapter](#)
- class [StatePagerAdapter](#)

5.7 Package it.unibo.torsello.bluetoothpositioning.constant

Composti

- class [DeviceConstants](#)
- class [KFilterConstants](#)
- class [SettingConstants](#)

5.8 Package it.unibo.torsello.bluetoothpositioning.distanceEstimation

Composti

- class [Estimation](#)

5.9 Package it.unibo.torsello.bluetoothpositioning.extra

Composti

- class [FABBehavior](#)

5.10 Package it.unibo.torsello.bluetoothpositioning.filters

Package

- package [kalmanFilter](#)

Composti

- class [MyArmaRssiFilter](#)

5.11 Package it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter

Composti

- class [KFilter](#)
- class [KFilterBuilder](#)

5.12 Package it.unibo.torsello.bluetoothpositioning.fragment

Composti

- class [CameraFragment](#)
- class [DeviceChartFragment](#)
- class [DeviceDetailFragment](#)
- class [DeviceDetailInner0Fragment](#)
- class [DeviceDetailInner1Fragment](#)
- class [DeviceDetailInner2Fragment](#)
- class [DeviceDetailReportFragment](#)
- class [DeviceDetailResumeFragment](#)
- class [DeviceListFragment](#)
- class [SettingsFragment](#)
- class [UsbMeasurementFragment](#)

5.13 Package it.unibo.torsello.bluetoothpositioning.model

Composti

- class [Device](#)

5.14 Package it.unibo.torsello.bluetoothpositioning.observables

Composti

- class [DeviceObservable](#)
- class [UsbMeasurementObservable](#)

5.15 Package it.unibo.torsello.bluetoothpositioning.task

Composti

- class [SaveImageTask](#)

5.16 Package it.unibo.torsello.bluetoothpositioning.util

Composti

- class [CameraPreviewUtil](#)
- class [ChartUtil](#)
- class [ReportUtils](#)
- class [UsbUtil](#)

6 Documentazione delle classi

6.1 Riferimenti per la classe it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity

Diagramma delle classi per it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity

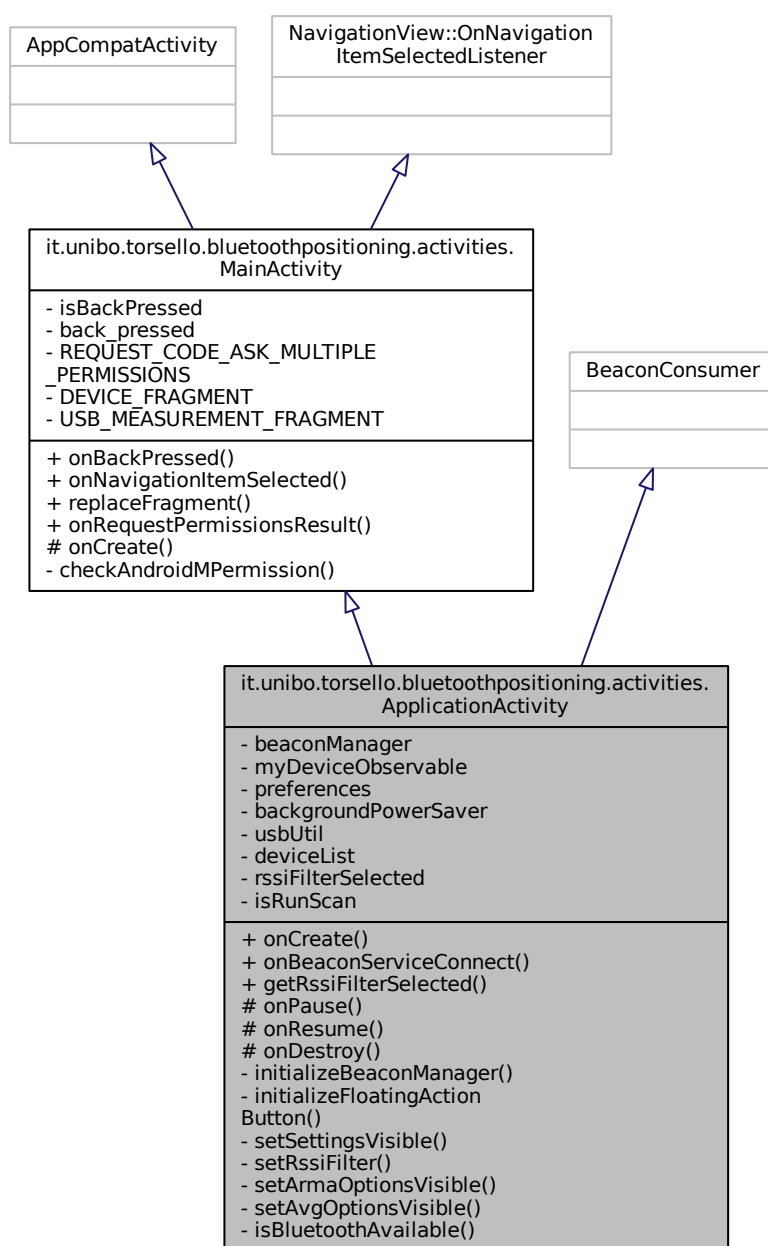
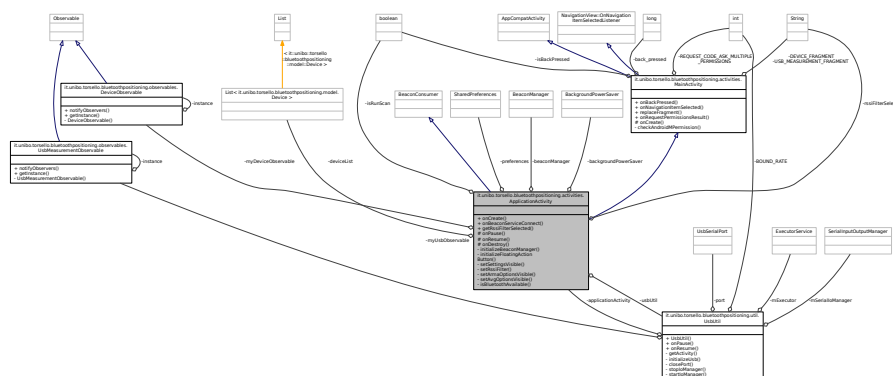


Diagramma di collaborazione per it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity:



Membri pubblici

- void [onCreate](#) (Bundle savedInstanceState)
- void [onBeaconServiceConnect](#) ()
- String [getRssiFilterSelected](#) ()

Membri protetti

- void [onPause](#) ()
- void [onResume](#) ()
- void [onDestroy](#) ()

Membri privati

- void [initializeBeaconManager](#) ()
- void [initializeFloatingActionButton](#) ()
- void [setSettingsVisible](#) (final boolean scanStarted)
- void [setRssiFilter](#) ()
- void [setArmaOptionsVisible](#) (final boolean visible)
- void [setAvgOptionsVisible](#) (final boolean visible)
- boolean [isBluetoothAvailable](#) ()

Attributi privati

- BeaconManager [beaconManager](#)
- DeviceObservable [myDeviceObservable](#)
- SharedPreferences [preferences](#)
- BackgroundPowerSaver [backgroundPowerSaver](#)
- UsbUtil [usbUtil](#)
- List< [Device](#) > [deviceList](#)
- String [rssiFilterSelected](#)
- boolean [isRunScan](#) = false

6.1.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.1.2 Documentazione delle funzioni membro

6.1.2.1 getRssiFilterSelected()

String it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.getRssiFilterSelected ()

```
287                                     {
288         return rssiFilterSelected;
289     }
```

6.1.2.2 initializeBeaconManager()

void it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.initializeBeaconManager () [private]

```
72                                     {
73     beaconManager = BeaconManager.getInstanceForApplication(getApplicationContext());
74     beaconManager.bind(this);
75
76     // Save battery whenever the application is not visible.
77     // This reduces bluetooth power usage by about 60%
78     backgroundPowerSaver = new BackgroundPowerSaver(getApplicationContext());
79
80     // Log.i("AltBeacon filter used:", BeaconManager.getRssiFilterImplClass().getSimpleName());
81
82     // for finding different type of beacon,
83     beaconManager.getBeaconParsers().clear();
84
85     // Alt beacon
86     beaconManager.getBeaconParsers().add(new BeaconParser()
87         .setBeaconLayout(BeaconParser.ALTBEACON_LAYOUT));
88     // Detect the main identifier (UID) frame:
89     beaconManager.getBeaconParsers().add(new BeaconParser()
90         .setBeaconLayout(BeaconParser.EDDYSTONE_UID_LAYOUT));
91     // Detect the telemetry (TLM) frame:
92     beaconManager.getBeaconParsers().add(new BeaconParser()
93         .setBeaconLayout(BeaconParser.EDDYSTONE_TLM_LAYOUT));
94     // Detect the URL frame:
95     beaconManager.getBeaconParsers().add(new BeaconParser()
96         .setBeaconLayout(BeaconParser.EDDYSTONE_URL_LAYOUT));
97     // Standard Apple iBeacon
98     beaconManager.getBeaconParsers().add(new BeaconParser()
99         .setBeaconLayout(DeviceConstants.APPLE_BEACON_LAYOUT));
100    // Estimote Nearable
101    beaconManager.getBeaconParsers().add(new BeaconParser()
102        .setBeaconLayout(DeviceConstants.ESTIMOTE_NEARABLE_LAYOUT));
103
104    beaconManager.setForegroundScanPeriod(500L);
105    beaconManager.setForegroundBetweenScanPeriod(0L);
106
107    // beaconManager.setMaxTrackingAge(2000);
108 }
```

6.1.2.3 `initializeFloatingActionButton()`

```
void it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.initializeFloatingActionButton ( ) [private]
```

```
110                                     {
111     final FloatingActionButton fab = (FloatingActionButton) findViewById(R.id.fab);
112     Snackbar.make(fab, R.string.snackBar_start_scanning, Snackbar.LENGTH_INDEFINITE).show();
113     fab.setOnClickListener(new View.OnClickListener() {
114         @Override
115         public void onClick(View view) {
116
117             if (isBluetoothAvailable()) {
118
119                 isRunScan = !isRunScan;
120                 Region region = new Region("RegionId", null, null, null);
121
122                 setSettingsVisible(isRunScan);
123
124                 if (isRunScan) {
125                     fab.setImageResource(R.drawable.ic_bluetooth_searching_white_24dp);
126                     try {
127                         beaconManager.startRangingBeaconsInRegion(region);
128                     } catch (RemoteException e) {
129                         e.printStackTrace();
130                     }
131                     Snackbar.make(view, R.string.snackBar_scanning_enabled,
132                                 Snackbar.LENGTH_SHORT).show();
133                 } else {
134                     fab.setImageResource(R.drawable.ic_bluetooth_white_24dp);
135                     try {
136                         beaconManager.stopRangingBeaconsInRegion(region);
137                     } catch (RemoteException e) {
138                         e.printStackTrace();
139                     }
140                     Snackbar.make(view, R.string.snackBar_scanning_disabled,
141                                 Snackbar.LENGTH_INDEFINITE).show();
142                 }
143             }
144         }
145     });
146 }
```

6.1.2.4 `isBluetoothAvailable()`

```
boolean it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.isBluetoothAvailable ( ) [private]
```

```
355                                     {
356     try {
357         final FloatingActionButton fab = (FloatingActionButton) findViewById(R.id.fab);
358         if (!beaconManager.checkAvailability()) {
359
360             new AlertDialog.Builder(this)
361                 .setTitle(R.string.dialog_bluetooth_title)
362                 .setMessage(R.string.dialog_bluetooth_text)
363                 .setPositiveButton(android.R.string.ok, null)
364                 .setOnDismissListener(new DialogInterface.OnDismissListener() {
365                     @Override
366                     public void onDismiss(DialogInterface dialog) {
367                         BluetoothAdapter.getDefaultAdapter().enable();
368                         fab.setImageResource(R.drawable.ic_bluetooth_white_24dp);
369                         Snackbar.make(fab, R.string.snackBar_start_scanning,
370                                     Snackbar.LENGTH_INDEFINITE).show();
371                     }
372                 }).show();
373             fab.setImageResource(R.drawable.ic_bluetooth_disabled_black_24dp);
374             Snackbar.make(fab, R.string.snackBar_scanning_disabled,
375                         Snackbar.LENGTH_INDEFINITE).show();
376             return false;
377         }
378     } catch (RuntimeException e) {
379         e.printStackTrace();
380     }
381     return true;
382 }
```

6.1.2.5 onBeaconServiceConnect()

```
void it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.onBeaconServiceConnect ( )
```

```

164                                     {
165
166         try {
167             beaconManager.updateScanPeriods();
168         } catch (RemoteException e) {
169             e.printStackTrace();
170         }
171
172         beaconManager.addRangeNotifier(new RangeNotifier() {
173             @Override
174             public void didRangeBeaconsInRegion(final Collection<Beacon> beacons, Region region) {
175
176                 setRssiFilter();
177
178                 for (Beacon b : beacons) {
179
180                     // take from the list the device
181                     Device device = DeviceConstants.DEVICE_MAP.get(b.getBluetoothAddress());
182
183                     if (device != null) { // useful only if DEVICE_MAP is empty
184                         double processNoise = preferences.getFloat(SettingConstants.
KALMAN_NOISE_VALUE, 0);
185                         device.setBeacon(b);
186                         device.updateDistance(processNoise);
187
188                         if (!deviceList.contains(device)) {
189                             deviceList.add(device);
190                         }
191                     }
192                 }
193
194                 new Thread(new Runnable() {
195                     @Override
196                     public void run() {
197                         runOnUiThread(new Runnable() {
198
199                             @Override
200                             public void run() {
201                                 myDeviceObservable.
notifyObservers(deviceList);
202                             }
203                         });
204                     }
205                 }).start();
206             }
207         });
208     }

```

6.1.2.6 onCreate()

```
void it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.onCreate (
    Bundle savedInstanceState )
```

```

55                                     {
56         super.onCreate(savedInstanceState);
57
58         deviceList = new ArrayList<>();
59
60         myDeviceObservable = DeviceObservable.getInstance();
61
62         preferences = getSharedPreferences(SettingConstants.SETTINGS_PREFERENCES, 0);
63
64         usbUtil = new UsbUtil(this);
65
66         initializeBeaconManager();
67
68         initializeFloatingActionButton();
69     }
70 }

```

6.1.2.7 `onDestroy()`

```
void it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.onDestroy ( ) [protected]
```

```
346         {
347     if (beaconManager.isBound(this)) {
348         beaconManager.unbind(this);
349         backgroundPowerSaver.onActivityDestroyed(this);
350     }
351
352     super.onDestroy();
353 }
```

6.1.2.8 `onPause()`

```
void it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.onPause ( ) [protected]
```

```
319         {
320     if (beaconManager.isBound(this)) {
321         beaconManager.setBackgroundMode(true);
322         backgroundPowerSaver.onActivityPaused(this);
323     }
324
325     usbUtil.onPause();
326
327     super.onPause();
328 }
```

6.1.2.9 `onResume()`

```
void it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.onResume ( ) [protected]
```

```
331         {
332     super.onResume();
333
334     if (beaconManager.isBound(this)) {
335         beaconManager.setBackgroundMode(false);
336         backgroundPowerSaver.onActivityResumed(this);
337     }
338
339     isBluetoothAvailable();
340
341     usbUtil.onResume();
342
343 }
```

6.1.2.10 `setArmaOptionsVisible()`

```
void it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.setArmaOptions↵
Visible (
    final boolean visible ) [private]
```

```
291         {
292     runOnUiThread(new Runnable() {
293         @Override
294         public void run() {
295             if (visible) {
296                 findViewById(R.id.radioGroupArmaOptions).setVisibility(View.VISIBLE);
297             } else {
298                 findViewById(R.id.radioGroupArmaOptions).setVisibility(View.GONE);
299             }
300         }
301     });
302 }
```

6.1.2.11 setAvgOptionsVisible()

```
void it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.setAvgOptionsVisible (
```

```
    final boolean visible ) [private]
```

```
304                                     {
305         runOnUiThread(new Runnable() {
306             @Override
307             public void run() {
308                 if (visible) {
309                     findViewById(R.id.radioGroupAverageOptions).setVisibility(View.VISIBLE);
310                 } else {
311                     findViewById(R.id.radioGroupAverageOptions).setVisibility(View.GONE);
312                 }
313             }
314         });
315     }
```

6.1.2.12 setRssiFilter()

```
void it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.setRssiFilter ( )
[private]
```

```
210                                     {
211
212         StringBuilder selectOption = new StringBuilder();
213
214         int sorting = preferences.getInt(SettingConstants.FILTER_RSSI, 0);
215         switch (sorting) {
216             case 0:
217                 case R.id.radioButton_no_rssi_filtering:
218                     setArmaOptionsVisible(false);
219                     setAvgOptionsVisible(false);
220
221                     selectOption.append("No RSSI filtering");
222
223                     MyArmaRssiFilter.enableArmaFilter(false);
224                     BeaconManager.setRssiFilterImplClass(MyArmaRssiFilter.class);
225                     break;
226
227                 case R.id.radioButton_arma_rssi_filter:
228                     setArmaOptionsVisible(true);
229                     setAvgOptionsVisible(false);
230
231                     selectOption.append("ARMA RSSI filter");
232
233                     int armaOption = preferences.getInt(SettingConstants.ARMA_OPTION, 0);
234                     switch (armaOption) {
235                         case 0:
236                             case R.id.radioButton_arma_op1:
237                                 MyArmaRssiFilter.setArmaSpeed(0.1D);
238                                 break;
239                             case R.id.radioButton_arma_op2:
240                                 MyArmaRssiFilter.setArmaSpeed(0.25D);
241                                 break;
242                             case R.id.radioButton_arma_op3:
243                                 MyArmaRssiFilter.setArmaSpeed(0.5D);
244                                 break;
245                     }
246
247                     selectOption.append(" - Speed ").append(MyArmaRssiFilter.getArmaSpeed());
248
249                     MyArmaRssiFilter.enableArmaFilter(true);
250                     BeaconManager.setRssiFilterImplClass(MyArmaRssiFilter.class);
251                     break;
252
253                 case R.id.radioButton_average_rssi_filter:
254
255                     setArmaOptionsVisible(false);
256                     setAvgOptionsVisible(true);
257
258                     selectOption.append("AVG RSSI filter");
259
260                     int avgOption = preferences.getInt(SettingConstants.AVG_OPTION, 0);
261
262                     long sampleExpirationMilliseconds = 0;
```

```

263
264         switch (avgOption) {
265             case 0:
266                 case R.id.radioButton_avg_op1:
267                     sampleExpirationMilliseconds = 20000L;
268                     break;
269                 case R.id.radioButton_avg_op2:
270                     sampleExpirationMilliseconds = 10000L;
271                     break;
272                 case R.id.radioButton_avg_op3:
273                     sampleExpirationMilliseconds = 5000L;
274                     break;
275             }
276
277         selectOption.append(" - ").append(sampleExpirationMilliseconds).append(" ms");
278
279         RunningAverageRssiFilter.setSampleExpirationMilliseconds(sampleExpirationMilliseconds);
280         BeaconManager.setRssiFilterImplClass(RunningAverageRssiFilter.class);
281         break;
282     }
283
284     rssiFilterSelected = String.valueOf(selectOption);
285 }

```

6.1.2.13 `setSettingsVisible()`

```

void it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.setSettingsVisible
(
    final boolean scanStarted ) [private]

148
149         runOnUiThread(new Runnable() {
150             @Override
151             public void run() {
152                 if (!scanStarted) {
153                     findViewById(R.id.text_setting_disabled).setVisibility(View.VISIBLE);
154                     findViewById(R.id.nested_setting).setVisibility(View.GONE);
155                 } else {
156                     findViewById(R.id.text_setting_disabled).setVisibility(View.GONE);
157                     findViewById(R.id.nested_setting).setVisibility(View.VISIBLE);
158                 }
159             }
160         });
161     }

```

6.1.3 Documentazione dei membri dato

6.1.3.1 `backgroundPowerSaver`

```

BackgroundPowerSaver it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.↵
backgroundPowerSaver [private]

```

6.1.3.2 `beaconManager`

```

BeaconManager it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.beacon↵
Manager [private]

```

6.1.3.3 `deviceList`

```

List<Device> it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.deviceList
[private]

```

6.1.3.4 `isRunScan`

```

boolean it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.isRunScan =
false [private]

```


6.1.3.5 myDeviceObservable

```
DeviceObservable it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.my↔
DeviceObservable [private]
```

6.1.3.6 preferences

```
SharedPreferences it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.↔
preferences [private]
```

6.1.3.7 rssiFilterSelected

```
String it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.rssiFilter↔
Selected [private]
```

6.1.3.8 usbUtil

```
UsbUtil it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity.usbUtil [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [ApplicationActivity.java](#)

6.2 Riferimenti per la classe it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment

Diagramma delle classi per it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment

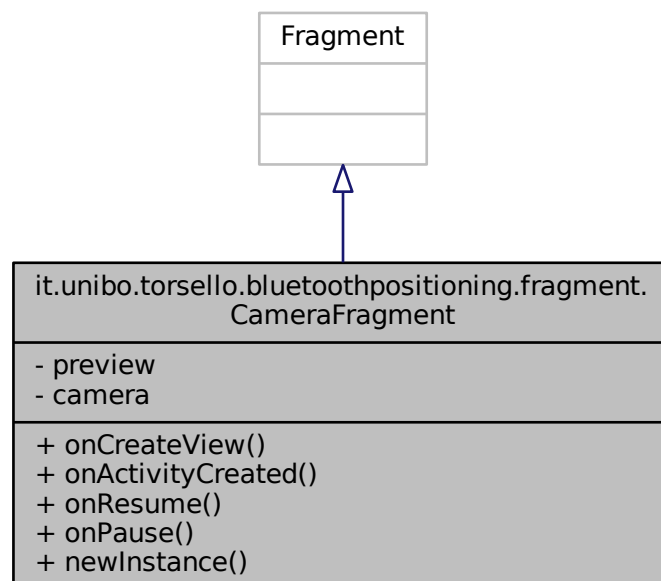
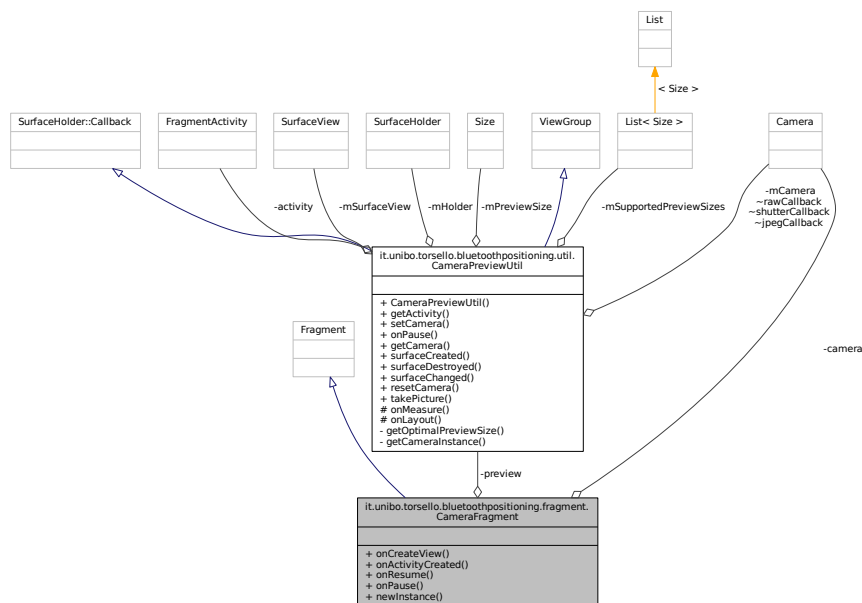


Diagramma di collaborazione per it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment:



Membri pubblici

- View [onCreateView](#) (LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState)
- void [onActivityCreated](#) (@Nullable Bundle savedInstanceState)
- void [onResume](#) ()
- void [onPause](#) ()

Membri pubblici statici

- static [CameraFragment newInstance](#) ()

Attributi privati

- [CameraPreviewUtil](#) preview
- Camera [camera](#)

6.2.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.2.2 Documentazione delle funzioni membro

6.2.2.1 newInstance()

```
static CameraFragment it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment.new↔
Instance ( ) [static]
```

```
26
27     return new CameraFragment();
28 }
```

6.2.2.2 onActivityCreated()

```
void it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment.onActivityCreated (
    @Nullable Bundle savedInstanceState )

71                                     {
72     super.onActivityCreated(savedInstanceState);
73
74     getActivity().findViewById(R.id.fab_camera).setOnClickListener(new View.OnClickListener() {
75         @Override
76         public void onClick(View v) {
77             preview.takePicture();
78         }
79     });
80
81 }
```

6.2.2.3 onCreateView()

```
View it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment.onCreateView (
    LayoutInflater inflater,
    ViewGroup container,
    Bundle savedInstanceState )

31                                     {
32
33     View root = inflater.inflate(R.layout.fragment_camera, container, false);
34     preview = new CameraPreviewUtil(getContext(), (SurfaceView) root.findViewById(R.id.
surfaceView));
35     ((FrameLayout) root.findViewById(R.id.layout)).addView(preview);
36     preview.setKeepScreenOn(true);
37     preview.setOnClickListener(new OnClickListener() {
38
39         @Override
40         public void onClick(View arg0) {
41         //         preview.takePicture();
42             camera.autoFocus(new Camera.AutoFocusCallback() {
43                 @Override
44                 public void onAutoFocus(boolean success, Camera arg1) {
45                 //                 if (success) {
46                 //                     preview.takePicture();
47                 //                 }
48             }
49         });
50     });
51
52     preview.setOnLongClickListener(new View.OnLongClickListener() {
53         @Override
54         public boolean onLongClick(View arg0) {
55
56             camera.autoFocus(new Camera.AutoFocusCallback() {
57                 @Override
58                 public void onAutoFocus(boolean success, Camera arg1) {
59                 //                 if (success) {
60                 //                     preview.takePicture();
61                 //                 }
62             }
63         });
64         return true;
65     });
66
67     return root;
68 }
```

6.2.2.4 onPause()

```
void it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment.onPause ( )

91                                     {
92     preview.onPause();
93     super.onPause();
94 }
```

6.2.2.5 `onResume()`

```
void it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment.onResume ( )
```

```
84         {
85             super.onResume();
86             preview.setCamera(getActivity());
87             camera = preview.getCamera();
88         }
```

6.2.3 Documentazione dei membri dato

6.2.3.1 `camera`

```
Camera it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment.camera [private]
```

6.2.3.2 `preview`

```
CameraPreviewUtil it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment.preview [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [CameraFragment.java](#)

6.3 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil`

Diagramma delle classi per `it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil`

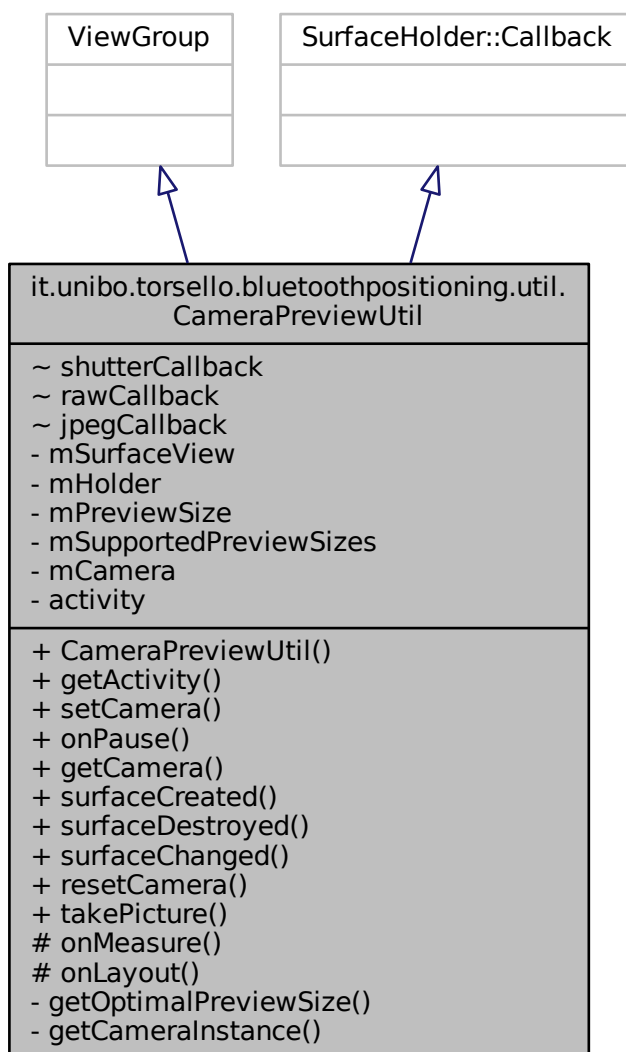
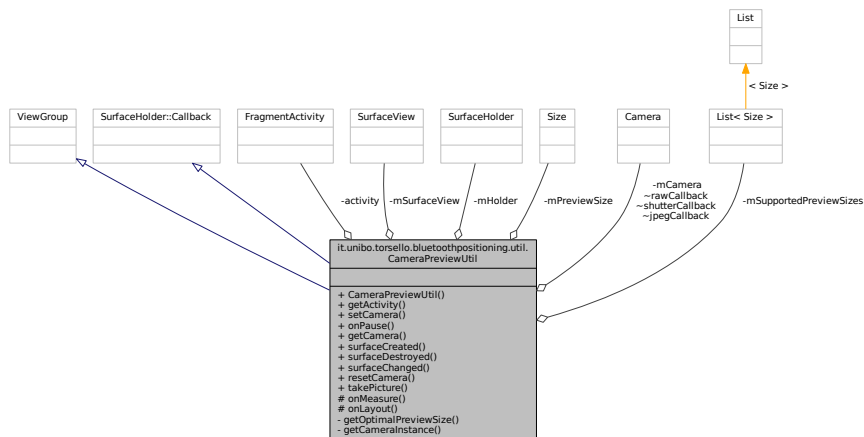


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil`:



Membri pubblici

- `CameraPreviewUtil` (Context context, SurfaceView sv)
- `FragmentActivity` `getActivity()`
- `void` `setCamera` (FragmentActivity fragmentActivity)
- `void` `onPause()`
- `Camera` `getCamera()`
- `void` `surfaceCreated` (SurfaceHolder holder)
- `void` `surfaceDestroyed` (SurfaceHolder holder)
- `void` `surfaceChanged` (SurfaceHolder holder, int format, int w, int h)
- `void` `resetCamera()`
- `void` `takePicture()`

Membri protetti

- `void` `onMeasure` (int widthMeasureSpec, int heightMeasureSpec)
- `void` `onLayout` (boolean changed, int l, int t, int r, int b)

Attributi con visibilità di package

- `Camera.ShutterCallback` `shutterCallback`
- `Camera.PictureCallback` `rawCallback`
- `Camera.PictureCallback` `jpegCallback`

Membri privati

- `Size` `getOptimalPreviewSize` (List< Size > sizes, int w, int h)

Membri privati statici

- `static Camera` `getCameraInstance()`

Attributi privati

- SurfaceView [mSurfaceView](#)
- SurfaceHolder [mHolder](#)
- Size [mPreviewSize](#)
- List< Size > [mSupportedPreviewSizes](#)
- Camera [mCamera](#)
- FragmentActivity [activity](#)

6.3.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.3.2 Documentazione dei costruttori e dei distruttori

6.3.2.1 CameraPreviewUtil()

```
it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.CameraPreviewUtil (
    Context context,
    SurfaceView sv )

32                                     {
33     super(context);
34     mSurfaceView = sv;
35
36     mHolder = mSurfaceView.getHolder();
37     mHolder.addCallback(this);
38     mHolder.setType(SurfaceHolder.SURFACE_TYPE_PUSH_BUFFERS);
39 }
```

6.3.3 Documentazione delle funzioni membro

6.3.3.1 getActivity()

```
FragmentActivity it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.getActivity ( )

41                                     {
42     return activity;
43 }
```

6.3.3.2 getCamera()

```
Camera it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.getCamera ( )

81                                     {
82     return mCamera;
83 }
```

6.3.3.3 getCameraInstance()

```
static Camera it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.getCameraInstance
( ) [static], [private]
```

A safe way to get an instance of the CameraUtil object.

```
88                                     {
89
90         Camera c = null;
91
92         try {
93             int numCams = Camera.getNumberOfCameras();
94             if (numCams > 0) {
95                 c = Camera.open(0); // attempt to get a CameraUtil instance
96             }
97         } catch (RuntimeException e) {
98             // CameraUtil is not available (in use or does not exist)
99             e.printStackTrace();
100         }
101
102         return c; // returns null if camera is unavailable
103     }
```

6.3.3.4 getOptimalPreviewSize()

```
Size it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.getOptimalPreviewSize (
    List< Size > sizes,
    int w,
    int h ) [private]
```

```
169                                     {
170         final double ASPECT_TOLERANCE = 0.1;
171         double targetRatio = (double) w / h;
172         if (sizes == null) return null;
173
174         Size optimalSize = null;
175         double minDiff = Double.MAX_VALUE;
176
177         // int targetHeight = h;
178
179         // Try to find an size match aspect ratio and size
180         for (Size size : sizes) {
181             double ratio = (double) size.width / size.height;
182             if (Math.abs(ratio - targetRatio) > ASPECT_TOLERANCE) continue;
183             if (Math.abs(size.height - h) < minDiff) {
184                 optimalSize = size;
185                 minDiff = Math.abs(size.height - h);
186             }
187         }
188
189         // Cannot find the one match the aspect ratio, ignore the requirement
190         if (optimalSize == null) {
191             minDiff = Double.MAX_VALUE;
192             for (Size size : sizes) {
193                 if (Math.abs(size.height - h) < minDiff) {
194                     optimalSize = size;
195                     minDiff = Math.abs(size.height - h);
196                 }
197             }
198         }
199         return optimalSize;
200     }
```


6.3.3.5 onLayout()

```

void it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.onLayout (
    boolean changed,
    int l,
    int t,
    int r,
    int b ) [protected]

120
121                                     {
122     if (changed && getChildCount() > 0) {
123         final View child = getChildAt(0);
124
125         final int width = r - l;
126         final int height = b - t;
127
128         int previewWidth = width;
129         int previewHeight = height;
130         if (mPreviewSize != null) {
131             previewWidth = mPreviewSize.width;
132             previewHeight = mPreviewSize.height;
133         }
134
135         // Center the child SurfaceView within the parent.
136         if (width * previewHeight > height * previewWidth) {
137             final int scaledChildWidth = previewWidth * height / previewHeight;
138             child.layout((width - scaledChildWidth) / 2, 0,
139                         (width + scaledChildWidth) / 2, height);
140         } else {
141             final int scaledChildHeight = previewHeight * width / previewWidth;
142             child.layout(0, (height - scaledChildHeight) / 2,
143                         width, (height + scaledChildHeight) / 2);
144         }
145     }
146 }

```

6.3.3.6 onMeasure()

```

void it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.onMeasure (
    int widthMeasureSpec,
    int heightMeasureSpec ) [protected]

106
107                                     {
108     // We purposely disregard child measurements because act as a
109     // wrapper to a SurfaceView that centers the camera preview instead
110     // of stretching it.
111     final int width = resolveSize(getSuggestedMinimumWidth(), widthMeasureSpec);
112     final int height = resolveSize(getSuggestedMinimumHeight(), heightMeasureSpec);
113     setMeasuredDimension(width, height);
114
115     if (mSupportedPreviewSizes != null) {
116         mPreviewSize = getOptimalPreviewSize(
117             mSupportedPreviewSizes, width, height);
118     }
119 }

```

6.3.3.7 onPause()

```

void it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.onPause ( )

73
74                                     {
75     if (mCamera != null) {
76         mCamera.stopPreview();
77         mCamera.release();
78         mCamera = null;
79     }
80 }

```

6.3.3.8 `resetCamera()`

```
void it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.resetCamera ( )
```

```
215         {
216         new Thread(new Runnable() {
217             @Override
218             public void run() {
219                 mCamera.startPreview();
220             }
221         }).start();
222
223
224     }
```

6.3.3.9 `setCamera()`

```
void it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.setCamera (
    FragmentActivity fragmentActivity )
```

```
45         {
46
47         this.activity = fragmentActivity;
48         try {
49             mCamera = getCameraInstance();
50         } catch (RuntimeException ex) {
51             Toast.makeText(fragmentActivity, "camera_not_found", Toast.LENGTH_LONG).show();
52         }
53
54         if (mCamera != null) {
55
56             mSupportedPreviewSizes = mCamera.getParameters().
getSupportedPreviewSizes();
57             requestLayout();
58
59             // get Camera parameters
60             Camera.Parameters params = mCamera.getParameters();
61
62             List<String> focusModes = params.getSupportedFocusModes();
63             if (focusModes.contains(Camera.Parameters.FOCUS_MODE_AUTO)) {
64                 // set the focus mode
65                 params.setFocusMode(Camera.Parameters.FOCUS_MODE_AUTO);
66                 // set Camera parameters
67                 mCamera.setParameters(params);
68             }
69         }
70
71     }
```

6.3.3.10 `surfaceChanged()`

```
void it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.surfaceChanged (
    SurfaceHolder holder,
    int format,
    int w,
    int h )
```

```
203         {
204         if (mCamera != null) {
205             Camera.Parameters parameters = mCamera.getParameters();
206             parameters.setPreviewSize(mPreviewSize.width,
mPreviewSize.height);
207             requestLayout();
208
209             mCamera.setParameters(parameters);
210
211             resetCamera();
212         }
213     }
```

6.3.3.11 surfaceCreated()

```
void it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.surfaceCreated (
    SurfaceHolder holder )
```

```
148                                     {
149     // The Surface has been created, acquire the camera and tell it where
150     // to draw.
151     try {
152         if (mCamera != null) {
153             mCamera.setDisplayOrientation(90);
154             mCamera.setPreviewDisplay(holder);
155         }
156     } catch (IOException exception) {
157         // Log.e(TAG, "IOException caused by setPreviewDisplay()", exception);
158     }
159 }
```

6.3.3.12 surfaceDestroyed()

```
void it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.surfaceDestroyed (
    SurfaceHolder holder )
```

```
162                                     {
163     // Surface will be destroyed when we return, so stop the preview.
164     if (mCamera != null) {
165         mCamera.stopPreview();
166     }
167 }
```

6.3.3.13 takePicture()

```
void it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.takePicture ( )
```

```
246                                     {
247
248     mCamera.takePicture(shutterCallback, rawCallback,
249         jpegCallback);
249 }
```

6.3.4 Documentazione dei membri dato

6.3.4.1 activity

```
FragmentActivity it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.activity [private]
```

6.3.4.2 jpegCallback

```
Camera.PictureCallback it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.jpeg↔
Callback [package]
```

Valore iniziale:

```
= new Camera.PictureCallback() {
    public void onPictureTaken(byte[] data, final Camera camera) {
        new SaveImageTask(getActivity()).execute(data);

        resetCamera();
    }
}
```

6.3.4.3 `mCamera`

`Camera it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.mCamera [private]`

6.3.4.4 `mHolder`

`SurfaceHolder it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.mHolder [private]`

6.3.4.5 `mPreviewSize`

`Size it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.mPreviewSize [private]`

6.3.4.6 `mSupportedPreviewSizes`

`List<Size> it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.mSupportedPreview↵
Sizes [private]`

6.3.4.7 `mSurfaceView`

`SurfaceView it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.mSurfaceView [private]`

6.3.4.8 `rawCallback`

`Camera.PictureCallback it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.raw↵
Callback [package]`

Valore iniziale:

```
= new Camera.PictureCallback() {  
    public void onPictureTaken(byte[] data, Camera camera) {  
    }  
}
```

6.3.4.9 `shutterCallback`

`Camera.ShutterCallback it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil.shutter↵
Callback [package]`

Valore iniziale:

```
= new Camera.ShutterCallback() {  
    public void onShutter() {  
    }  
}
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [CameraPreviewUtil.java](#)

6.4 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.util.ChartUtil`

Diagramma delle classi per `it.unibo.torsello.bluetoothpositioning.util.ChartUtil`

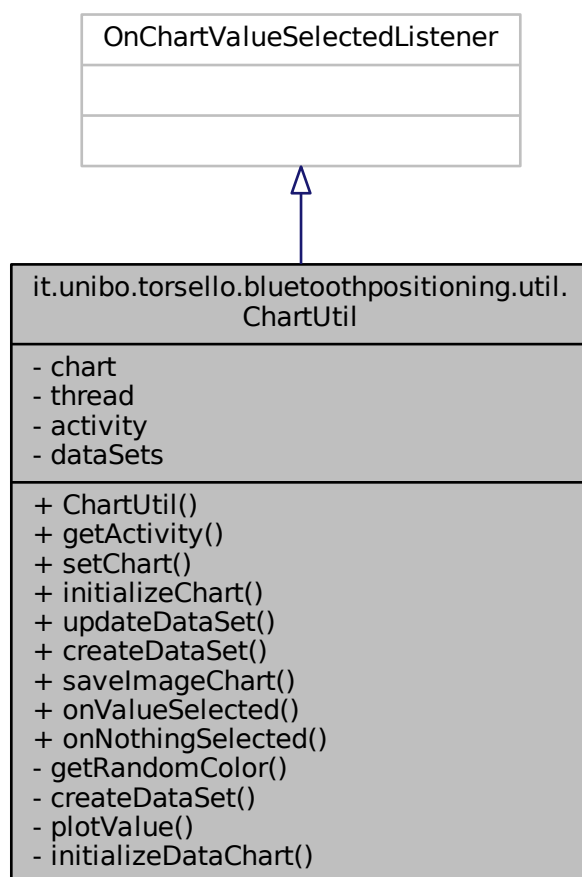
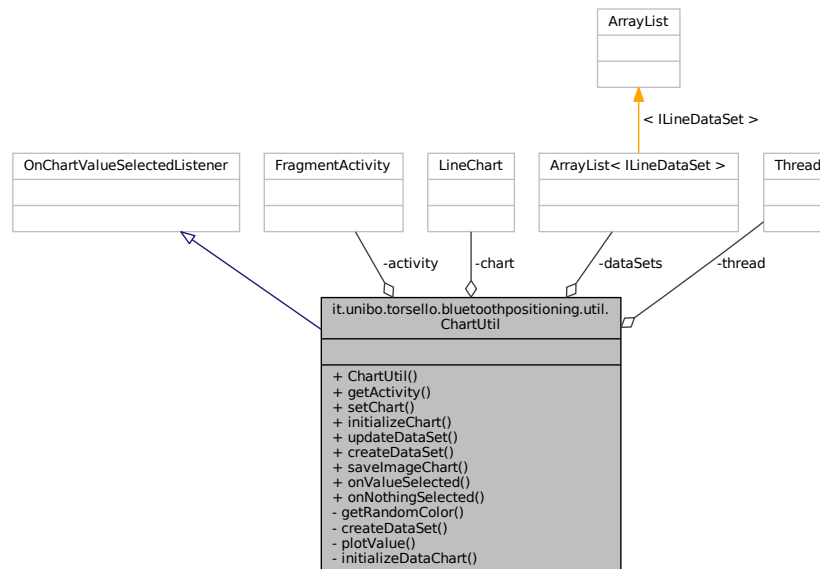


Diagramma di collaborazione per it.unibo.torsello.bluetoothpositioning.util.ChartUtil:



Membri pubblici

- `ChartUtil` (`FragmentActivity fragmentActivity`)
- `FragmentActivity getActivity ()`
- `void setChart (LineChart chart)`
- `void initializeChart ()`
- `void updateDataSet (final ArrayList< Double > doubleArrayList)`
- `void createDataSet (ArrayList< String > args)`
- `void saveImageChart (String chartName, String formattedDate)`
- `void onValueSelected (Entry e, Highlight h)`
- `void onNothingSelected ()`

Membri privati

- `int getRandomColor ()`
- `LineDataSet createDataSet (String nameDataSet, int color)`
- `void plotValue (LineData data, int index, Double value)`
- `void initializeDataChart (ArrayList< ILineDataSet > dataSets)`

Attributi privati

- `LineChart chart`
- `Thread thread`
- `FragmentActivity activity`
- `ArrayList< ILineDataSet > dataSets`

6.4.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.4.2 Documentazione dei costruttori e dei distruttori

6.4.2.1 ChartUtil()

```
it.unibo.torsello.bluetoothpositioning.util.ChartUtil.ChartUtil (
    FragmentActivity fragmentActivity )
```

```
42                                     {
43     this.activity = fragmentActivity;
44 }
```

6.4.3 Documentazione delle funzioni membro

6.4.3.1 createDataSet() [1/2]

```
void it.unibo.torsello.bluetoothpositioning.util.ChartUtil.createDataSet (
    ArrayList< String > args )
```

```
134                                     {
135     // create a dataset and give it a type
136
137     for (String s : args) {
138         if (s != null) {
139             if (s.equals(getActivity().getString(R.string.chart_arduino))) {
140                 dataSets.add(createDataSet(s, Color.RED));
141             } else if (s.equals(getActivity().getString(R.string.chart_raw_distance))) {
142                 dataSets.add(createDataSet(s, Color.GREEN));
143             } else if (s.equals(getActivity().getString(R.string.chart_altbeacon))) {
144                 dataSets.add(createDataSet(s, Color.BLUE));
145             } else if (s.equals(getActivity().getString(R.string.chart_kalman_filter))) {
146                 dataSets.add(createDataSet(s, Color.CYAN));
147             } else {
148                 dataSets.add(createDataSet(s,
149                     getRandomColor()));
150             }
151         }
152     }
153 }
```

6.4.3.2 createDataSet() [2/2]

```
LineDataSet it.unibo.torsello.bluetoothpositioning.util.ChartUtil.createDataSet (
    String nameDataSet,
    int color ) [private]
```

```
160                                     {
161     LineDataSet set = new LineDataSet(null, nameDataSet);
162     set.setColor(color);
163     return set;
164 }
```

6.4.3.3 getActivity()

```
FragmentActivity it.unibo.torsello.bluetoothpositioning.util.ChartUtil.getActivity ( )
```

```
46                                     {
47     return activity;
48 }
```

6.4.3.4 `getRandomColor()`

```
int it.unibo.torsello.bluetoothpositioning.util.ChartUtil.getRandomColor ( ) [private]
```

```
155         {
156     Random rnd = new Random();
157     return Color.argb(255, rnd.nextInt(255), rnd.nextInt(255), rnd.nextInt(255));
158 }
```

6.4.3.5 `initializeChart()`

```
void it.unibo.torsello.bluetoothpositioning.util.ChartUtil.initializeChart ( )
```

```
54         {
55     dataSets = new ArrayList<>();
56
57     chart.setOnChartValueSelectedListener(this);
58
59     // no description text
60     chart.setDescription("");
61     chart.setNoDataTextDescription("You need to provide data for the chart.");
62
63     chart.setDrawGridBackground(true);
64
65     // if disabled, scaling can be done on x- and y-axis separately
66     chart.setPinchZoom(true);
67
68     // set an alternative background color
69     chart.setBackgroundColor(Color.LTGRAY);
70
71     Typeface mTfLight = Typeface.createFromAsset(getActivity().getAssets(), "
OpenSans-Light.ttf");
72     Typeface mTfBold = Typeface.createFromAsset(getActivity().getAssets(), "
OpenSans-Bold.ttf");
73
74     // get the legend (only possible after setting data)
75     Legend l = chart.getLegend();
76     // l.setPosition(Legend.LegendPosition.RIGHT_OF_CHART);
77     // l.setOrientation(Legend.LegendOrientation.VERTICAL);
78     l.setXEntrySpace(7f);
79     l.setYEntrySpace(7f);
80
81     XAxis xl = chart.getXAxis();
82     xl.setTypeface(mTfLight);
83     xl.setGridColor(Color.LTGRAY);
84     xl.setTextColor(Color.WHITE);
85
86     YAxis leftAxis = chart.getAxisLeft();
87     leftAxis.setTypeface(mTfLight);
88     leftAxis.setTextColor(Color.WHITE);
89
90     YAxis rightAxis = chart.getAxisRight();
91     rightAxis.setTypeface(mTfBold);
92
93 }
```

6.4.3.6 `initializeDataChart()`

```
void it.unibo.torsello.bluetoothpositioning.util.ChartUtil.initializeDataChart (
    ArrayList< ILineDataSet > dataSets ) [private]
```

```
185         {
186
187     // create a data object with the datasets
188     LineData lineData = new LineData(dataSets);
189     lineData.setValueTextColor(Color.RED);
190     lineData.setValueTextSize(9f);
191     lineData.setValueFormatter(new DefaultValueFormatter(2));
192
193     // set data
194     chart.setData(lineData);
195 }
```


6.4.3.7 onNothingSelected()

```
void it.unibo.torsello.bluetoothpositioning.util.ChartUtil.onNothingSelected ( )
```

```
213                                     {
214 //      Log.i("Nothing selected", "Nothing selected.");
215 }
```

6.4.3.8 onValueSelected()

```
void it.unibo.torsello.bluetoothpositioning.util.ChartUtil.onValueSelected (
    Entry e,
    Highlight h )
```

```
207                                     {
208     Snackbar.make(getActivity().findViewById(R.id.fab), e.copy() + " selected"
209         , Snackbar.LENGTH_SHORT).show();
210 }
```

6.4.3.9 plotValue()

```
void it.unibo.torsello.bluetoothpositioning.util.ChartUtil.plotValue (
    LineData data,
    int index,
    Double value ) [private]
```

```
166                                     {
167
168     ILineDataSet set = data.getDataSetByIndex(index);
169
170     set.addEntry(new Entry(set.getEntryCount(), value.floatValue()));
171
172     data.notifyDataChanged();
173
174     // let the chart know it's data has changed
175     chart.notifyDataSetChanged();
176
177     // limit the number of visible entries
178     chart.setVisibleXRangeMaximum(10);
179
180     // move to the latest entry
181     chart.moveToX(data.getEntryCount());
182
183 }
```

6.4.3.10 saveImageChart()

```
void it.unibo.torsello.bluetoothpositioning.util.ChartUtil.saveImageChart (
    String chartName,
    String formattedDate )
```

```
197                                     {
198     String nameImage = chartName + " " + System.currentTimeMillis();
199     chart.saveToGallery(nameImage, chartName
200         + " - " + formattedDate, null, Bitmap.CompressFormat.JPEG, 100);
201
202     Snackbar.make(getActivity().findViewById(R.id.fab), chartName + " stored"
203         , Snackbar.LENGTH_SHORT).show();
204 }
```

6.4.3.11 `setChart()`

```
void it.unibo.torsello.bluetoothpositioning.util.ChartUtil.setChart (
    LineChart chart )
```

```
50
51         this.chart = chart;
52     }
```

6.4.3.12 `updateDataSet()`

```
void it.unibo.torsello.bluetoothpositioning.util.ChartUtil.updateDataSet (
    final ArrayList< Double > doubleArrayList )
```

```
95
96         if (thread != null)
97             thread.interrupt();
98
99         thread = new Thread(new Runnable() {
100             @Override
101             public void run() {
102                 if (getActivity() != null) {
103
104                     getActivity().runOnUiThread(new Runnable() {
105                         @Override
106                         public void run() {
107
108                             LineData data = chart.getData();
109                             if (data == null) {
110                                 if (dataSets != null) {
111                                     initializeDataChart(
112                                         dataSets);
113                                 } else {
114                                     throw new Error("Error: dataSet is null!!!");
115                                 }
116                             } else {
117                                 if (data.getDataSetCount() > 0) {
118                                     Log.i("miao", data.getDataSetCount() + " ");
119                                     for (int i = 0; i < doubleArrayList.size(); i++) {
120                                         plotValue(data, i, doubleArrayList.get(i));
121                                     }
122                                 }
123                             }
124                         }
125                     });
126                 });
127             }
128         });
129
130         thread.start();
131     }
```

6.4.4 Documentazione dei membri dato

6.4.4.1 `activity`

```
FragmentActivity it.unibo.torsello.bluetoothpositioning.util.ChartUtil.activity [private]
```

6.4.4.2 `chart`

```
LineChart it.unibo.torsello.bluetoothpositioning.util.ChartUtil.chart [private]
```

6.4.4.3 `dataSets`

```
ArrayList<ILineDataSet> it.unibo.torsello.bluetoothpositioning.util.ChartUtil.dataSets [private]
```

6.4.4.4 thread

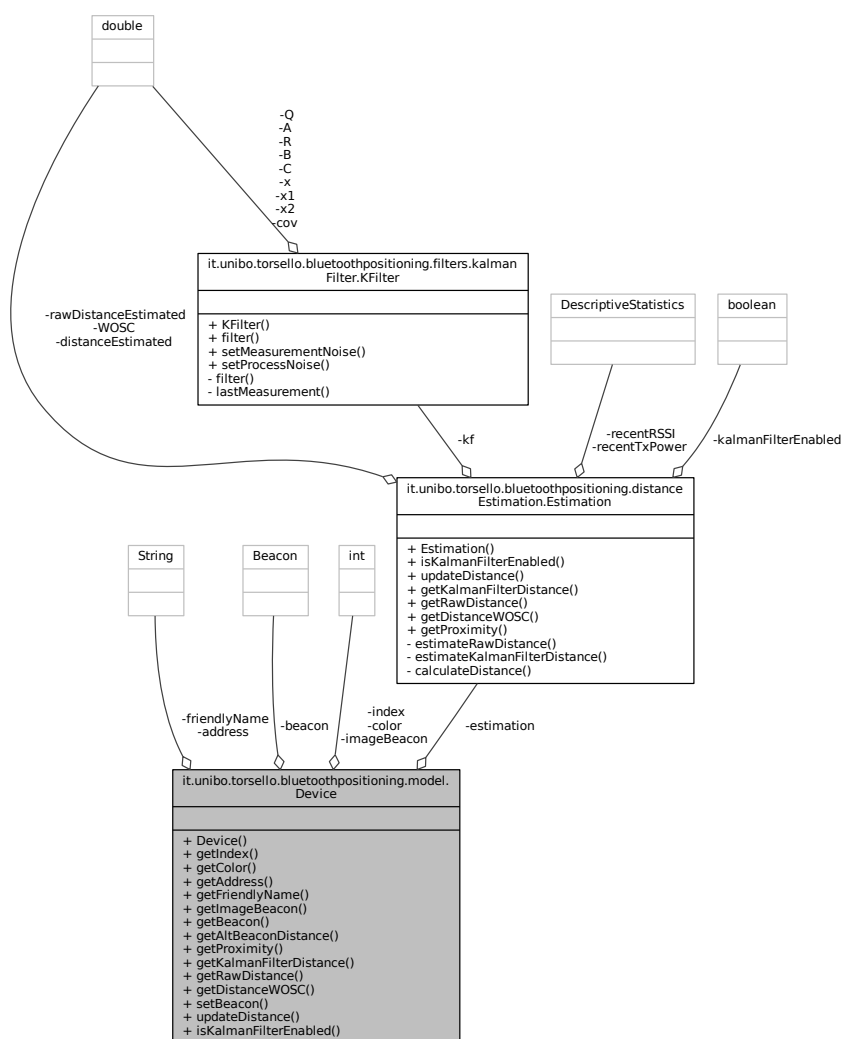
Thread `it.unibo.torsello.bluetoothpositioning.util.ChartUtil.thread` [private]

La documentazione per questa classe è stata generata a partire dal seguente file:

- [ChartUtil.java](#)

6.5 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.model.Device`

Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.model.Device`:



Membri pubblici

- `Device` (`int index`, `String address`, `String friendlyName`, `Integer color`, `Integer imageBeacon`)
- `int getIndex ()`
- `Integer getColor ()`

- String `getAddress ()`
- String `getFriendlyName ()`
- Integer `getImageBeacon ()`
- Beacon `getBeacon ()`
- double `getAltBeaconDistance ()`
- String `getProximity ()`
- double `getKalmanFilterDistance ()`
- double `getRawDistance ()`
- double `getDistanceWOSC ()`
- void `setBeacon (Beacon beacon)`
- void `updateDistance (double processNoise)`
- boolean `isKalmanFilterEnabled ()`

Attributi privati

- Estimation `estimation`
- String `address`
- String `friendlyName`
- Beacon `beacon`
- int `imageBeacon`
- int `color`
- int `index`

6.5.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.5.2 Documentazione dei costruttori e dei distruttori

6.5.2.1 Device()

```
it.unibo.torsello.bluetoothpositioning.model.Device.Device (
    int index,
    String address,
    String friendlyName,
    Integer color,
    Integer imageBeacon )

21
22         this.index = index;
23         this.address = address;
24         this.friendlyName = friendlyName;
25         this.estimation = new Estimation();
26         this.imageBeacon = imageBeacon;
27         this.color = color;
28     }
```

6.5.3 Documentazione delle funzioni membro

6.5.3.1 getAddress()

```
String it.unibo.torsello.bluetoothpositioning.model.Device.getAddress ( )

38
39         return this.address;
40     }
```

6.5.3.2 getAltBeaconDistance()

```
double it.unibo.torsello.bluetoothpositioning.model.Device.getAltBeaconDistance ( )
```

```
54                                     {  
55     return beacon.getDistance();  
56 }
```

6.5.3.3 getBeacon()

```
Beacon it.unibo.torsello.bluetoothpositioning.model.Device.getBeacon ( )
```

```
50                                     {  
51     return beacon;  
52 }
```

6.5.3.4 getColor()

```
Integer it.unibo.torsello.bluetoothpositioning.model.Device.getColor ( )
```

```
34                                     {  
35     return color;  
36 }
```

6.5.3.5 getDistanceWOSC()

```
double it.unibo.torsello.bluetoothpositioning.model.Device.getDistanceWOSC ( )
```

```
75                                     {  
76     return estimation.getDistanceWOSC();  
77 }
```

6.5.3.6 getFriendlyName()

```
String it.unibo.torsello.bluetoothpositioning.model.Device.getFriendlyName ( )
```

```
42                                     {  
43     return friendlyName;  
44 }
```

6.5.3.7 getImageBeacon()

```
Integer it.unibo.torsello.bluetoothpositioning.model.Device.getImageBeacon ( )
```

```
46                                     {  
47     return imageBeacon;  
48 }
```

6.5.3.8 `getIndex()`

```
int it.unibo.torsello.bluetoothpositioning.model.Device.getIndex ( )
```

```
30         {  
31             return index;  
32         }
```

6.5.3.9 `getKalmanFilterDistance()`

```
double it.unibo.torsello.bluetoothpositioning.model.Device.getKalmanFilterDistance ( )
```

```
63         {  
64             if (!estimation.isKalmanFilterEnabled()) {  
65                 return 0;  
66             }  
67             return estimation.getKalmanFilterDistance();  
68         }  
69     }
```

6.5.3.10 `getProximity()`

```
String it.unibo.torsello.bluetoothpositioning.model.Device.getProximity ( )
```

```
58         {  
59             return estimation.getProximity();  
60         }
```

6.5.3.11 `getRawDistance()`

```
double it.unibo.torsello.bluetoothpositioning.model.Device.getRawDistance ( )
```

```
71         {  
72             return estimation.getRawDistance();  
73         }
```

6.5.3.12 `isKalmanFilterEnabled()`

```
boolean it.unibo.torsello.bluetoothpositioning.model.Device.isKalmanFilterEnabled ( )
```

```
89         {  
90             return estimation.isKalmanFilterEnabled();  
91         }
```

6.5.3.13 `setBeacon()`

```
void it.unibo.torsello.bluetoothpositioning.model.Device.setBeacon (   
    Beacon beacon )
```

```
79         {  
80             this.beacon = beacon;  
81         }
```

6.5.3.14 updateDistance()

```
void it.unibo.torsello.bluetoothpositioning.model.Device.updateDistance (
    double processNoise )
```

```
83                                     {
84         if (beacon != null) {
85             estimation.updateDistance(beacon, processNoise);
86         }
87     }
```

6.5.4 Documentazione dei membri dato

6.5.4.1 address

```
String it.unibo.torsello.bluetoothpositioning.model.Device.address [private]
```

6.5.4.2 beacon

```
Beacon it.unibo.torsello.bluetoothpositioning.model.Device.beacon [private]
```

6.5.4.3 color

```
int it.unibo.torsello.bluetoothpositioning.model.Device.color [private]
```

6.5.4.4 estimation

```
Estimation it.unibo.torsello.bluetoothpositioning.model.Device.estimation [private]
```

6.5.4.5 friendlyName

```
String it.unibo.torsello.bluetoothpositioning.model.Device.friendlyName [private]
```

6.5.4.6 imageBeacon

```
int it.unibo.torsello.bluetoothpositioning.model.Device.imageBeacon [private]
```

6.5.4.7 index

```
int it.unibo.torsello.bluetoothpositioning.model.Device.index [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [Device.java](#)

6.6 Riferimenti per la classe it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter

Diagramma delle classi per it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter

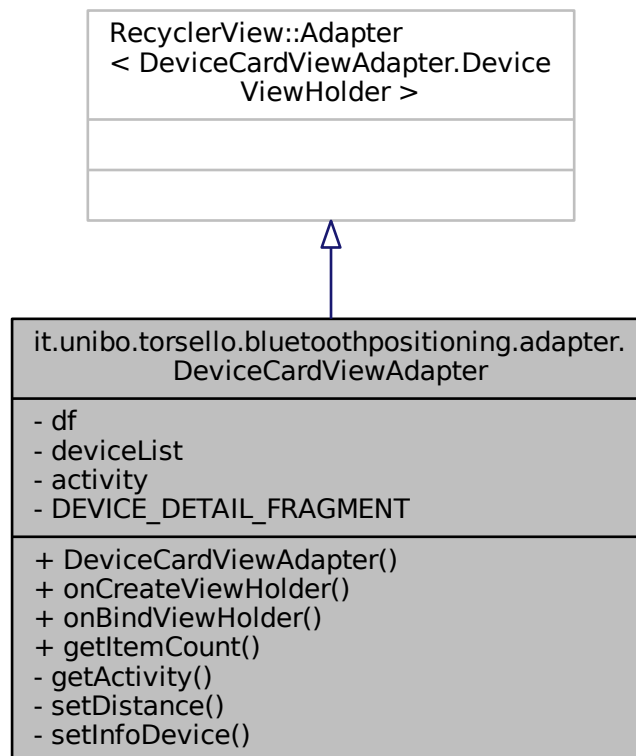
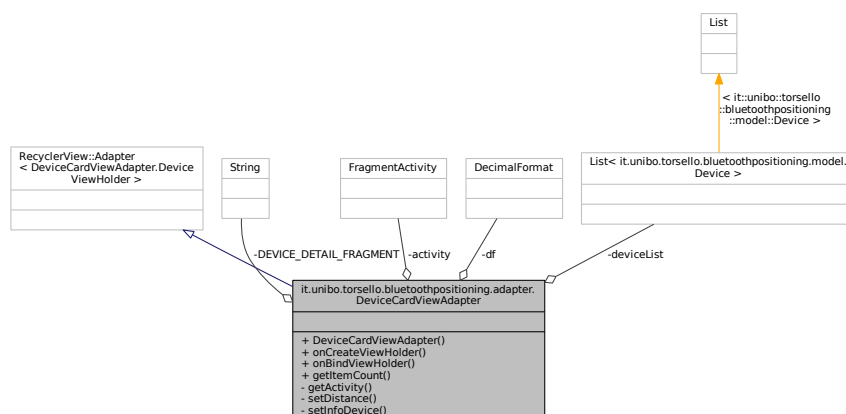


Diagramma di collaborazione per it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter:



Composti

- class [DeviceViewHolder](#)

Membri pubblici

- [DeviceCardViewAdapter](#) (final [FragmentActivity](#) *fragmentActivity*, List< [Device](#) > *deviceList*)
- [DeviceViewHolder onCreateViewHolder](#) ([ViewGroup](#) *parent*, int *viewType*)
- void [onBindViewHolder](#) ([DeviceViewHolder](#) *holder*, final int *position*)
- int [getItemCount](#) ()

Membri privati

- [FragmentActivity](#) [getActivity](#) ()
- void [setDistance](#) ([DeviceViewHolder](#) *holder*, [Device](#) *device*)
- void [setInfoDevice](#) ([DeviceViewHolder](#) *holder*, [Beacon](#) *beacon*)

Attributi privati

- [DecimalFormat](#) *df*
- List< [Device](#) > *deviceList*
- [FragmentActivity](#) *activity*

Attributi privati statici

- static final [String](#) [DEVICE_DETAIL_FRAGMENT](#) = "device detail"

6.6.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.6.2 Documentazione dei costruttori e dei distruttori**6.6.2.1 DeviceCardViewAdapter()**

```

it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceCardViewAdapter (
    final FragmentActivity fragmentActivity,
    List< Device > deviceList )

38
39
40     this.deviceList = new ArrayList<>();
41     this.deviceList = deviceList;
42     this.activity = fragmentActivity;
43
44     df = new DecimalFormat ("0.00", DecimalFormatSymbols.getInstance());
45 }
```

6.6.3 Documentazione delle funzioni membro**6.6.3.1 getActivity()**

```

FragmentActivity it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.get↔
Activity ( ) [private]

47
48     return activity;
49 }
```

6.6.3.2 `getItemCount()`

```
int it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.getItemCount ( )
```

```
223         {
224         return deviceList.size();
225     }
```

6.6.3.3 `onBindViewHolder()`

```
void it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.onBindViewHolder (
    DeviceViewHolder holder,
    final int position )
```

```
60
61
62     final Beacon beacon = deviceList.get(position).getBeacon();
63     final Device device = deviceList.get(position);
64
65     setInfoDevice(holder, beacon);
66
67     setDistance(holder, device);
68
69     final Integer imageBeacon = device.getImageBeacon();
70     if (imageBeacon != null) {
71         holder.imageView.setImageResource(imageBeacon);
72     } else {
73         holder.imageView.setImageResource(R.drawable.beacon_unknown);
74     }
75
76     holder.rssiTextView.setText(String.format("%sdb", beacon.getTxPower()));
77
78     holder.txPowerTextView.setText(String.format("%sdb", beacon.getRssi()));
79
80     final String friendlyName = device.getFriendlyName();
81     if (friendlyName != null) {
82         holder.friendlyNameTextView.setText(friendlyName);
83     } else {
84         holder.friendlyNameTextView.setText(android.R.string.unknownName);
85     }
86
87     final String bluetoothName = beacon.getBluetoothName();
88     if (bluetoothName != null) {
89         holder.defaultNameTextView.setText(bluetoothName);
90     } else {
91         holder.defaultNameTextView.setText(android.R.string.unknownName);
92     }
93
94     final String macAddress = beacon.getBluetoothAddress();
95     if (macAddress != null) {
96         holder.macTextView.setText(macAddress);
97     } else {
98         holder.macTextView.setText(android.R.string.unknownName);
99     }
100
101     final String proximity = device.getProximity();
102     if (proximity != null) {
103         holder.proximityTextView.setText(proximity);
104     } else {
105         holder.proximityTextView.setText(android.R.string.unknownName);
106     }
107
108     final Integer color = device.getColor();
109     if (color != null) {
110         holder.colorTextView.setText(color);
111     } else {
112         holder.colorTextView.setText(android.R.string.unknownName);
113     }
114
115     holder.view.setOnClickListener(new View.OnClickListener() {
116         @Override
117         public void onClick(View v) {
118             final String deviceDetailName;
119             if (device.getFriendlyName() != null) {
120                 deviceDetailName = device.getFriendlyName();
121             } else {
122                 deviceDetailName = device.getAddress();
```

```

123         }
124
125         new Thread(new Runnable() {
126             @Override
127             public void run() {
128                 getActivity().runOnUiThread(new Runnable() {
129                     @Override
130                     public void run() {
131
132                         Fragment currentFrag = getActivity().getSupportFragmentManager()
133                             .findFragmentByTag(
134                             DEVICE_DETAIL_FRAGMENT);
135
136                         if (currentFrag == null) {
137                             getActivity().getSupportFragmentManager().beginTransaction()
138                                 .replace(R.id.contentMainLayout,
139                                     DeviceDetailFragment.newInstance(deviceDetailName),
140                                     DEVICE_DETAIL_FRAGMENT)
141                                 .commit();
142                         }
143                     }
144                 });
145             }.start();
146         }
147     });
148 }

```

6.6.3.4 onCreateViewHolder()

```

DeviceViewHolder it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.onCreateViewHolder (
    ViewGroup parent,
    int viewType )

{

52
53
54     View root = LayoutInflater.from(parent.getContext())
55         .inflate(R.layout.list_items, parent, false);
56     return new DeviceViewHolder(root);
57 }

```

6.6.3.5 setDistance()

```

void it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.setDistance (
    DeviceViewHolder holder,
    Device device ) [private]

{

150
151     holder.altbeaconDistanceTextView.setText(String.format("%sm", df.format(device.
    getAltBeaconDistance())));
152
153     holder.standardRawDistanceTextView.setText(String.format("%sm", df.format(device.getRawDistance()
    )));
154
155     if (!device.isKalmanFilterEnabled()) {
156         holder.kalmanFilterDistanceTextView.setText(getActivity().getText(R.string.
    kalman_filter_disabled));
157     } else {
158         holder.kalmanFilterDistanceTextView.setText(String.format("%s", df.format(device.
    getKalmanFilterDistance())));
159     }
160 }

```

6.6.3.6 `setInfoDevice()`

```

void it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.setInfoDevice (
    DeviceViewHolder holder,
    Beacon beacon ) [private]

162
163
164
165     holder.visibilityUUIDLinearLayout.setVisibility(View.GONE);
166     holder.visibilityNameSpaceLinearLayout.setVisibility(View.VISIBLE);
167
168     if (beacon.getServiceUuid() == 0xfeaa) {
169         // Eddystone-UUID
170         if (beacon.getId1() != null) {
171             holder.nameSpaceTextView.setText (beacon.getId1().toString());
172         } else {
173             holder.nameSpaceTextView.setText (android.R.string.unknownName);
174         }
175
176         if (beacon.getId2() != null) {
177             holder.instanceTextView.setText (beacon.getId2().toString());
178         } else {
179             holder.instanceTextView.setText (android.R.string.unknownName);
180         }
181
182     } else if (beacon.getServiceUuid() == 0xbeac) {
183         // AltBeacon
184         // String url = UrlBeaconUrlCompressor.uncompress (beacon.getId1().toByteArray());
185     } else if (beacon.getServiceUuid() == 0x20) {
186         if (!beacon.getExtraDataFields().isEmpty()) {
187             // Eddystone-TLM
188         }
189     }
190 } else if (beacon.getServiceUuid() == 0x0000) {
191     // AppleIBeacon
192 } else if (beacon.getServiceUuid() == 0x0000) { //533 in dec
193
194     holder.visibilityUUIDLinearLayout.setVisibility(View.VISIBLE);
195     holder.visibilityNameSpaceLinearLayout.setVisibility(View.GONE);
196
197     // AppleIBeacon
198     if (beacon.getId1() != null) {
199         holder.uuidTextView.setText (beacon.getId1().toString());
200     } else {
201         holder.uuidTextView.setText (android.R.string.unknownName);
202     }
203
204     if (beacon.getId2() != null) {
205         holder.majorTextView.setText (beacon.getId2().toString());
206     } else {
207         holder.majorTextView.setText (android.R.string.unknownName);
208     }
209
210     if (beacon.getId3() != null) {
211         holder.minorTextView.setText (beacon.getId3().toString());
212     } else {
213         holder.minorTextView.setText (android.R.string.unknownName);
214     }
215
216 } else if (beacon.getServiceUuid() == 0x0000) {
217     // EstimoteNearable
218 }
219
220 }

```

6.6.4 Documentazione dei membri dato

6.6.4.1 `activity`

```

FragmentActivity it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.activity
[private]

```

6.6.4.2 DEVICE_DETAIL_FRAGMENT

```
final String it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DEVICE_DETAIL_FRAGMENT = "device detail" [static], [private]
```

6.6.4.3 deviceList

```
List<Device> it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.deviceList [private]
```

6.6.4.4 df

```
DecimalFormat it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.df [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [DeviceCardViewAdapter.java](#)

6.7 Riferimenti per la classe it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment

Diagramma delle classi per it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment

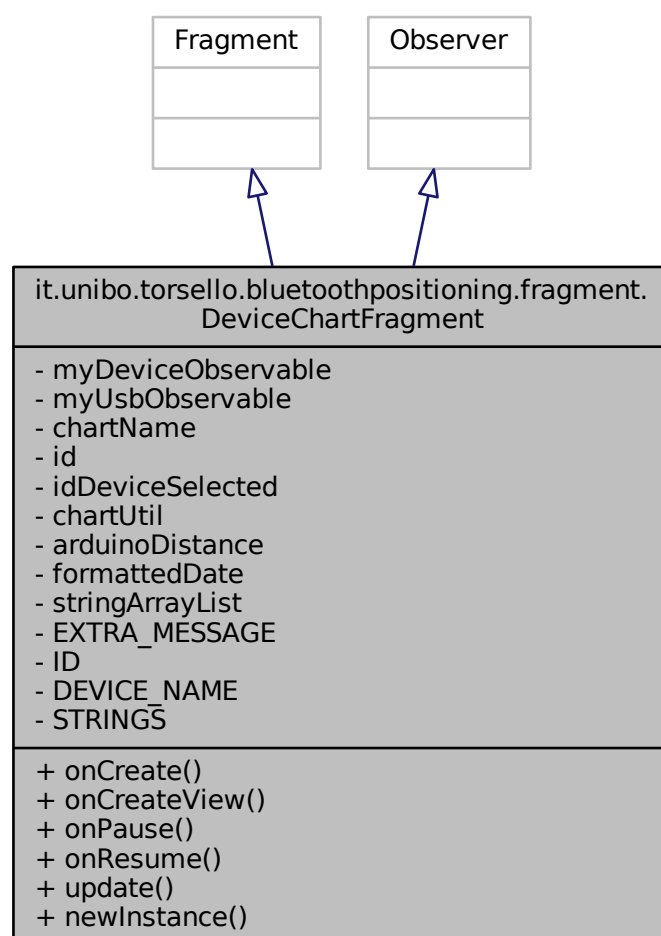
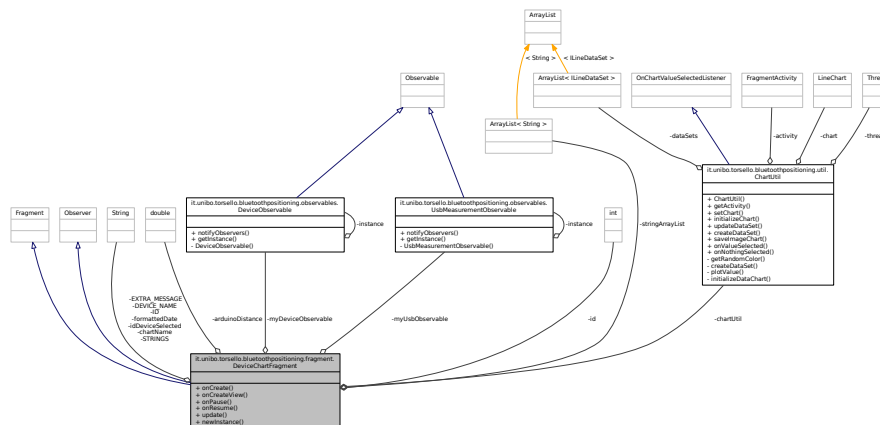


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment`:



Membri pubblici

- void `onCreate` (Bundle savedInstanceState)
- View `onCreateView` (LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState)
- void `onPause` ()
- void `onResume` ()
- void `update` (Observable observable, Object arg)

Membri pubblici statici

- static `DeviceChartFragment newInstance` (String message, int id, String deviceName, ArrayList< String > strings)

Attributi privati

- `DeviceObservable myDeviceObservable`
- `UsbMeasurementObservable myUsbObservable`
- String `chartName`
- int `id`
- String `idDeviceSelected`
- `ChartUtil chartUtil`
- double `arduinoDistance` = 0D
- String `formattedDate`
- ArrayList< String > `stringArrayList`

Attributi privati statici

- static final String `EXTRA_MESSAGE` = "EXTRA_MESSAGE"
- static final String `ID` = "ID"
- static final String `DEVICE_NAME` = "DEVICE_NAME"
- static final String `STRINGS` = "STRINGS"

6.7.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.7.2 Documentazione delle funzioni membro

6.7.2.1 newInstance()

```
static DeviceChartFragment it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.newInstance (
    String message,
    int id,
    String deviceName,
    ArrayList< String > strings ) [static]

52
53     DeviceChartFragment fragment = new DeviceChartFragment();
54     Bundle args = new Bundle();
55     args.putString(EXTRA_MESSAGE, message);
56     args.putInt(ID, id);
57     args.putString(DEVICE_NAME, deviceName);
58     args.putStringArrayList(SRINGS, strings);
59     fragment.setArguments(args);
60     return fragment;
61 }
```

6.7.2.2 onCreate()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.onCreate (
    Bundle savedInstanceState )

64
65     super.onCreate(savedInstanceState);
66
67     id = getArguments().getInt(ID);
68     chartName = getArguments().getString(EXTRA_MESSAGE);
69     idDeviceSelected = getArguments().getString(DEVICE_NAME);
70     stringArrayList = getArguments().getStringArrayList(
    SRINGS);
71
72     myDeviceObservable = DeviceObservable.getInstance();
73     myUsbObservable = UsbMeasurementObservable.getInstance();
74
75     chartUtil = new ChartUtil(getActivity());
76
77     SimpleDateFormat df = new SimpleDateFormat("dd-MMM-yyyy", Locale.getDefault());
78     formattedDate = df.format(Calendar.getInstance().getTime());
79 }
```

6.7.2.3 onCreateView()

```
View it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.onCreateView (
    LayoutInflater inflater,
    ViewGroup container,
    Bundle savedInstanceState )
```

```

82                                     {
83
84         View root = inflater.inflate(R.layout.fragment_device_detail_chart, container, false);
85
86         Button button = (Button) root.findViewById(R.id.button_save_image);
87         button.setOnClickListener(new View.OnClickListener() {
88             @Override
89             public void onClick(View v) {
90                 chartUtil.saveImageChart(chartName,
100                 formattedDate);
91             }
92         });
93
94         LineChart lineChart = (LineChart) root.findViewById(R.id.chart);
95
96         // add the charts
97         chartUtil.setChart(lineChart);
98
99         return root;
100     }

```

6.7.2.4 onPause()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.onPause ( )
```

```

103         {
104         myDeviceObservable.deleteObserver(this);
105         myUsbObservable.deleteObserver(this);
106         super.onPause();
107     }

```

6.7.2.5 onResume()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.onResume ( )
```

```

110         {
111         super.onResume();
112         myDeviceObservable.addObserver(this);
113         myUsbObservable.addObserver(this);
114         chartUtil.initializeChart();
115     }

```

6.7.2.6 update()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.update (
    Observable observable,
    Object arg )
```

```

118                                     {
119
120         if (observable instanceof UsbMeasurementObservable) {
121             if (arg instanceof Double) {
122                 arduinoDistance = (Double) arg;
123             }
124         }
125
126         if (observable instanceof DeviceObservable) {
127             if (arg instanceof List) {
128
129                 List<Device> devices = (List<Device>) arg;
130
131                 for (Device deviceSelected : devices) {
132                     if (deviceSelected.getFriendlyName().equals(idDeviceSelected) ||
133                         deviceSelected.getAddress().equals(idDeviceSelected)) {
134
135                         if (chartUtil != null) {
136
137                             chartUtil.createDataSet(
138                                 stringArrayList);

```



```

138
139
140         ArrayList<Double> dataSetForUpdates = new ArrayList<>();
141
142         for (String s : stringArrayList) {
143             if (s.equals(getString(R.string.chart_arduino))) {
144                 dataSetForUpdates.add(arduinoDistance);
145             }
146
147             if (s.equals(getString(R.string.chart_raw_distance))) {
148                 dataSetForUpdates.add(deviceSelected.getRawDistance());
149             }
150
151             if (s.equals(getString(R.string.chart_altbeacon))) {
152                 dataSetForUpdates.add(deviceSelected.getAltBeaconDistance());
153             }
154
155             if (s.equals(getString(R.string.chart_kalman_filter))) {
156                 dataSetForUpdates.add(deviceSelected.getKalmanFilterDistance());
157             }
158         }
159
160         chartUtil.updateDataSet(dataSetForUpdates);
161     }
162 }
163 }
164 }
165 }
166 }

```

6.7.3 Documentazione dei membri dato

6.7.3.1 arduinoDistance

```
double it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.arduinoDistance = 0D [private]
```

6.7.3.2 chartName

```
String it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.chartName [private]
```

6.7.3.3 chartUtil

```
ChartUtil it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.chartUtil [private]
```

6.7.3.4 DEVICE_NAME

```
final String it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.DEVICE_NAME = "DEVICE_NAME" [static], [private]
```

6.7.3.5 EXTRA_MESSAGE

```
final String it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.EXTRA_MESSAGE = "EXTRA_MESSAGE" [static], [private]
```

6.7.3.6 formattedDate

```
String it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.formattedDate [private]
```

6.7.3.7 ID

```
final String it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.ID = "ID" [static], [private]
```

6.7.3.8 id

```
int it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.id [private]
```

6.7.3.9 idDeviceSelected

```
String it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.idDeviceSelected  
[private]
```

6.7.3.10 myDeviceObservable

```
DeviceObservable it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.my↔  
DeviceObservable [private]
```

6.7.3.11 myUsbObservable

```
UsbMeasurementObservable it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.↔  
myUsbObservable [private]
```

6.7.3.12 stringArrayList

```
ArrayList<String> it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.string↔  
ArrayList [private]
```

6.7.3.13 STRINGS

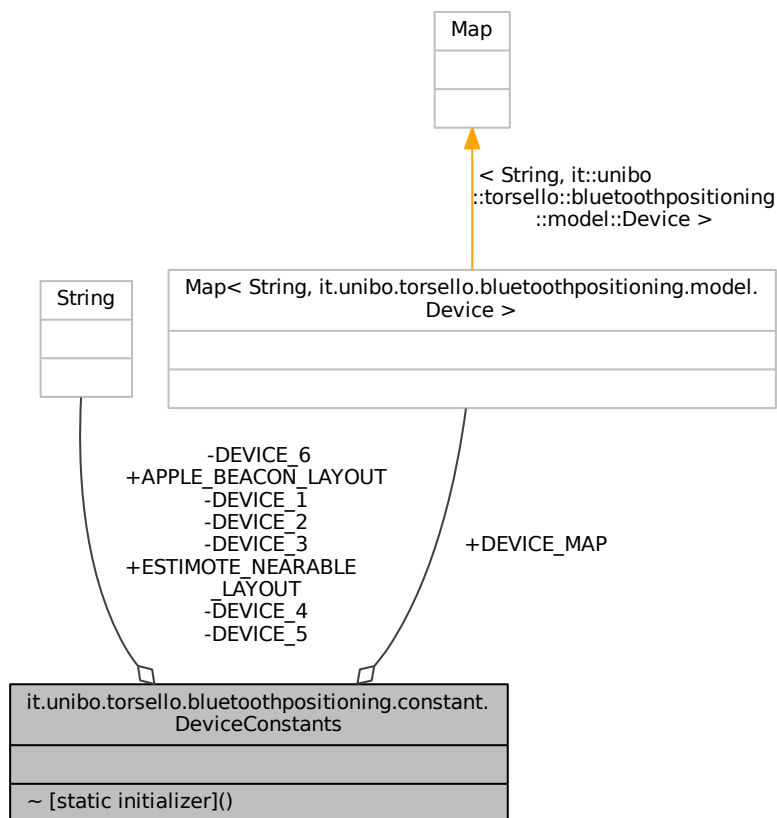
```
final String it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment.STRINGS =  
"STRINGS" [static], [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [DeviceChartFragment.java](#)

6.8 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants`

Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants`:



Attributi pubblici statici

- static final String `APPLE_BEACON_LAYOUT` = "m:2-3=0215,i:4-19,i:20-21,i:22-23,p:24-24"
- static final String `ESTIMOTE_NEARABLE_LAYOUT`
- static final Map< String, Device > `DEVICE_MAP`

Funzioni statiche con visibilità di package

- `[static initializer]`

Attributi privati statici

- static final String `DEVICE_1` = "C1:9B:B0:B9:01:9E"
- static final String `DEVICE_2` = "D1:BE:E2:E9:67:A6"
- static final String `DEVICE_3` = "FA:6B:72:1E:EB:46"
- static final String `DEVICE_4` = "D9:80:00:B7:16:78"
- static final String `DEVICE_5` = "DB:F6:F5:0C:23:BF"
- static final String `DEVICE_6` = "E7:E4:0E:F6:79:3F"

6.8.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.8.2 Documentazione delle funzioni membro

6.8.2.1 `[static initializer]()`

```
it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants.[static initializer] ( ) [static],  
[package]
```

6.8.3 Documentazione dei membri dato

6.8.3.1 `APPLE_BEACON_LAYOUT`

```
final String it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants.APPLE_BEACON_LAYOUT = "m:2-3=0215,i:4-19,i:20-21,i:22-23,p:24-24" [static]
```

6.8.3.2 `DEVICE_1`

```
final String it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants.DEVICE_1 = "C1:9B:B0:B9:01:9E" [static], [private]
```

6.8.3.3 `DEVICE_2`

```
final String it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants.DEVICE_2 = "D1:BE:E2:E9:67:A6" [static], [private]
```

6.8.3.4 `DEVICE_3`

```
final String it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants.DEVICE_3 = "FA:6B:72:1E:EB:46" [static], [private]
```

6.8.3.5 `DEVICE_4`

```
final String it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants.DEVICE_4 = "D9:80:00:B7:16:78" [static], [private]
```

6.8.3.6 `DEVICE_5`

```
final String it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants.DEVICE_5 = "DB:F6:F5:0C:23:BF" [static], [private]
```

6.8.3.7 `DEVICE_6`

```
final String it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants.DEVICE_6 = "E7:E4:0E:F6:79:3F" [static], [private]
```

6.8.3.8 DEVICE_MAP

```
final Map<String, Device> it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants.DEVICE_MAP [static]
```

6.8.3.9 ESTIMATE_NEARABLE_LAYOUT

```
final String it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants.ESTIMATE_NEARABLE_LAYOUT [static]
```

Valore iniziale:

```
= "m:1-2=0101,i:3-10,d:11-11,d:12-12," +  
  "d:13-14,d:15-15,d:16-16,d:17-17,d:18-18,d:19-19,d:20-20, p:21-21"
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [DeviceConstants.java](#)

6.9 Riferimenti per la classe it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment

Diagramma delle classi per it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment

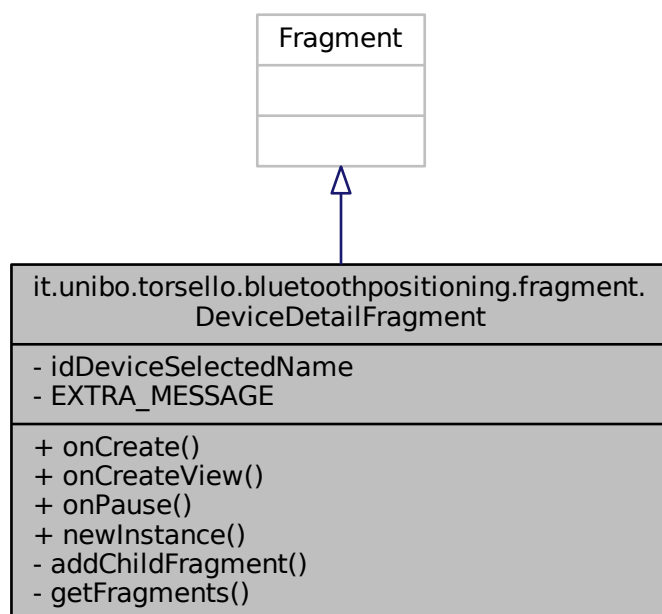
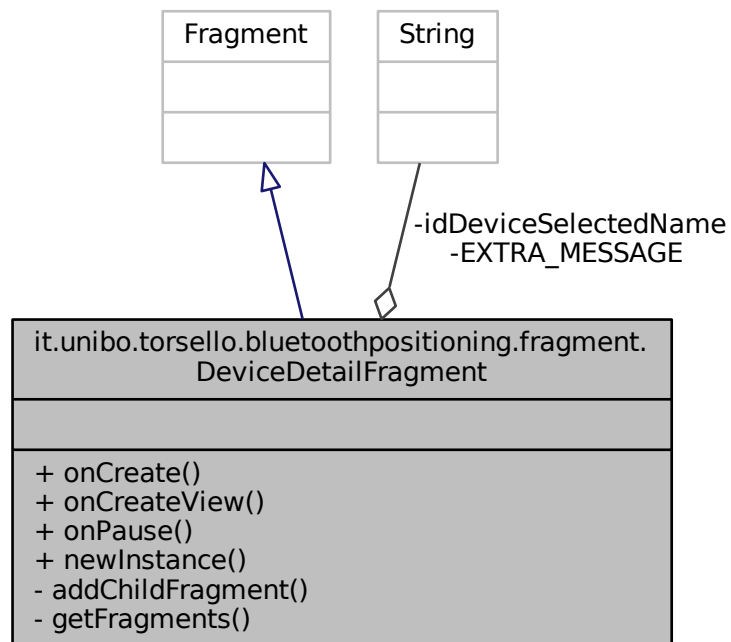


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment`:



Membri pubblici

- void `onCreate` (Bundle savedInstanceState)
- View `onCreateView` (LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState)
- void `onPause` ()

Membri pubblici statici

- static `DeviceDetailFragment newInstance` (String message)

Membri privati

- void `addChildFragment` (View root)
- ArrayList< Fragment > `getFragments` ()

Attributi privati

- String `idDeviceSelectedName`

Attributi privati statici

- static final String `EXTRA_MESSAGE` = "EXTRA_MESSAGE"

6.9.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.9.2 Documentazione delle funzioni membro

6.9.2.1 addChildFragmentManager()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment.addChildFragmentManager (
    View root ) [private]

62
63
64
65
66
67
68
69
70
71
72
```

```

{
    ViewPager mViewPager = (ViewPager) root.findViewById(R.id.view_pager);
    StatePagerAdapter myPagerAdapter = new StatePagerAdapter(getChildFragmentManager(),
getFragments());
    mViewPager.setAdapter(myPagerAdapter);
    mViewPager.setOffscreenPageLimit(getFragments().size());
    mViewPager.setCurrentItem(1);
    TabLayout tabLayout = (TabLayout) root.findViewById(R.id.sliding_tabs);
    tabLayout.setupWithViewPager(mViewPager);
}

```

6.9.2.2 getFragments()

```
ArrayList<Fragment> it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment.getFragments ( ) [private]

74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
```

```

{
    ArrayList<Fragment> fragments = new ArrayList<>();
    // fragment 0
    fragments.add(DeviceDetailInner0Fragment.newInstance(
idDeviceSelectedName));
    // fragment 1
    fragments.add(DeviceDetailInner1Fragment.newInstance(
idDeviceSelectedName));
    // fragment 2
    fragments.add(DeviceDetailInner2Fragment.newInstance(
idDeviceSelectedName));
    return fragments;
}

```

6.9.2.3 newInstance()

```
static DeviceDetailFragment it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment.newInstance (
    String message ) [static]

28
29
30
31
32
33
34
```

```

{
    DeviceDetailFragment fragment = new DeviceDetailFragment();
    Bundle args = new Bundle();
    args.putString(EXTRA_MESSAGE, message);
    fragment.setArguments(args);
    return fragment;
}

```

6.9.2.4 onCreate()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment.onCreate (
    Bundle savedInstanceState )
```

```
37                                     {
38         super.onCreate(savedInstanceState);
39
40         idDeviceSelectedName = getArguments().getString(
41             EXTRA_MESSAGE);
42     }
```

6.9.2.5 onCreateView()

```
View it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment.onCreateView (
    LayoutInflater inflater,
    ViewGroup container,
    Bundle savedInstanceState )
```

```
44                                     {
45         final View root = inflater.inflate(R.layout.fragment_device_detail, container, false);
46
47         getActivity().findViewById(R.id.toolbar).setVisibility(View.GONE);
48
49         // ((AppBarLayout) root.findViewById(R.id.appbar_detail)).setExpanded(false);
50         // ((CollapsingToolbarLayout)
51         root.findViewById(R.id.collapsing_toolbar)).setTitle(idDeviceSelectedName);
52
53         addChildFragment(root);
54         return root;
55     }
```

6.9.2.6 onPause()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment.onPause ( )
```

```
57                                     {
58         getActivity().findViewById(R.id.toolbar).setVisibility(View.VISIBLE);
59         super.onPause();
60     }
```

6.9.3 Documentazione dei membri dato

6.9.3.1 EXTRA_MESSAGE

```
final String it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment.EXTRA_MESSAGE = "EXTRA_MESSAGE" [static], [private]
```

6.9.3.2 idDeviceSelectedName

```
String it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment.idDeviceSelectedName [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [DeviceDetailFragment.java](#)

Composti

- interface [OnRecordingReport](#)
- interface [OnRecordingResume](#)

Membri pubblici

- void [onCreate](#) (Bundle savedInstanceState)
- void [onAttachFragment](#) (Fragment childFragment)
- View [onCreateView](#) (LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState)
- void [onPause](#) ()
- void [onResume](#) ()
- void [update](#) (Observable observable, Object arg)

Membri pubblici statici

- static [DeviceDetailInner0Fragment newInstance](#) (String deviceName)

Membri privati

- void [addChildFragment](#) (View root)
- ArrayList< Fragment > [getFragments](#) ()

Attributi privati

- boolean [check](#)
- [ReportUtils](#) reportUtils
- [DeviceObservable](#) myDeviceObservable
- [UsbMeasurementObservable](#) myUsbObservable
- String [idDeviceSelectedName](#)
- [OnRecordingResume](#) onRecordingResume
- [OnRecordingReport](#) onRecordingReport

Attributi privati statici

- static final String [EXTRA_MESSAGE](#) = "EXTRA_MESSAGE"
- static final String [DEVICE_NAME](#) = "DEVICE_NAME"

6.10.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.10.2 Documentazione delle funzioni membro

6.10.2.1 addChildFragmentManager()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.addChild↳
FragmentManager (
    View root ) [private]

143                                     {
144
145     ViewPager mViewPager = (ViewPager) root.findViewById(R.id.view_pager_inner_0);
146
147     // avoid casual fragment's destruction
148     mViewPager.setOffscreenPageLimit(getFragments().size());
149
150     StatePagerAdapter myPagerAdapter = new StatePagerAdapter(getChildFragmentManager(),
getFragments());
151     mViewPager.setAdapter(myPagerAdapter);
152
153     TabLayout tabLayout = (TabLayout) root.findViewById(R.id.sliding_tabs);
154     tabLayout.setupWithViewPager(mViewPager);
155 }
```

6.10.2.2 getFragments()

```
ArrayList<Fragment> it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.↳
getFragments ( ) [private]

157                                     {
158     ArrayList<Fragment> fragments = new ArrayList<>();
159
160     // nested fragment 0
161     fragments.add(DeviceDetailResumeFragment.newInstance());
162
163     // nested fragment 1
164     fragments.add(DeviceDetailReportFragment.newInstance());
165
166     return fragments;
167 }
```

6.10.2.3 newInstance()

```
static DeviceDetailInner0Fragment it.unibo.torsello.bluetoothpositioning.fragment.Device↳
DetailInner0Fragment.newInstance (
    String deviceName ) [static]

58                                     {
59     DeviceDetailInner0Fragment fragment = new DeviceDetailInner0Fragment();
60     Bundle args = new Bundle();
61     args.putString(EXTRA_MESSAGE, "testing");
62     args.putString(DEVICE_NAME, deviceName);
63     fragment.setArguments(args);
64     return fragment;
65 }
```

6.10.2.4 onAttachFragment()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.onAttach↳
FragmentManager (
    Fragment childFragment )

80                                     {
81     super.onAttachFragment(childFragment);
82     if (childFragment instanceof DeviceDetailReportFragment){
83         onRecordingReport = (OnRecordingReport) childFragment;
84     }
85
86     if (childFragment instanceof DeviceDetailResumeFragment){
87         onRecordingResume = (OnRecordingResume) childFragment;
88     }
89 }
```

6.10.2.5 onCreate()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.onCreate (
    Bundle savedInstanceState )
```

```
68         {
69             super.onCreate(savedInstanceState);
70
71             idDeviceSelectedName = getArguments().getString(
72                 DEVICE_NAME);
73             myDeviceObservable = DeviceObservable.getInstance();
74             myUsbObservable = UsbMeasurementObservable.getInstance();
75             reportUtils = new ReportUtils(getActivity(),
76                 idDeviceSelectedName);
77         }
```

6.10.2.6 onCreateView()

```
View it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.onCreateView (
    LayoutInflater inflater,
    ViewGroup container,
    Bundle savedInstanceState )
```

```
92     {
93         final View root = inflater.inflate(R.layout.fragment_device_detail_inner_0, container, false);
94
95         final ToggleButton toggle = (ToggleButton) root.findViewById(R.id.toggleButton);
96         toggle.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {
97             public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {
98                 check = isChecked;
99                 if (isChecked) {
100
101                     reportUtils.clearRecordedValues();
102
103                     toggle.setClickable(false);
104
105                     new Handler().postDelayed(new Runnable() {
106                         @Override
107                         public void run() {
108                             toggle.setClickable(true);
109                             toggle.setChecked(false);
110
111                             onRecordingReport.record(
112                                 reportUtils.getJson());
113                             onRecordingResume.record(
114                                 reportUtils.getResume());
115                         }, 5000);
116                     Snackbar.make(getActivity().findViewById(R.id.fab),
117                         "Start recording", Snackbar.LENGTH_SHORT).show();
118                 } else {
119                     reportUtils.createJson();
120                 }
121             }
122         });
123
124         addChildFragment(root);
125
126         return root;
127     }
```

6.10.2.7 onPause()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.onPause ( )
```

```
130     {
131         myDeviceObservable.deleteObserver(this);
132         myUsbObservable.deleteObserver(this);
133         super.onPause();
134     }
```

6.10.2.8 onResume()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.onResume ( )
```

```
137         {
138             super.onResume();
139             myDeviceObservable.addObserver(this);
140             myUsbObservable.addObserver(this);
141         }
```

6.10.2.9 update()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.update (
    Observable observable,
    Object arg )
```

```
170         {
171             if (observable instanceof UsbMeasurementObservable) {
172                 if (arg instanceof Double) {
173                     Double arduinoDistance = (Double) arg;
174                     if (check) {
175                         reportUtils.setArduinoValues(arduinoDistance);
176                     }
177                 }
178             }
179             if (observable instanceof DeviceObservable) {
180                 if (arg instanceof List) {
181                     List<Device> devices = (List<Device>) arg;
182                     for (Device deviceSelected : devices) {
183                         if (deviceSelected.getFriendlyName().equals(
184                             idDeviceSelectedName) ||
185                             deviceSelected.getAddress().equals(
186                                 idDeviceSelectedName)) {
187                             if (check) {
188                                 reportUtils.setAltBeaconValues(deviceSelected.
189                                     getAltBeaconDistance());
190                                 reportUtils.setkFilterValues(deviceSelected.
191                                     getKalmanFilterDistance());
192                                 reportUtils.setRawValues(deviceSelected.getRawDistance()
193                                     );
194                             }
195                         }
196                     }
197                 }
198             }
199         }
```

6.10.3 Documentazione dei membri dato

6.10.3.1 check

```
boolean it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.check [private]
```

6.10.3.2 DEVICE_NAME

```
final String it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.DEVICE_NAME = "DEVICE_NAME" [static], [private]
```

6.10.3.3 EXTRA_MESSAGE

```
final String it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.EXTRA_MESSAGE = "EXTRA_MESSAGE" [static], [private]
```

6.10.3.4 idDeviceSelectedName

```
String it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.idDeviceSelectedName [private]
```

6.10.3.5 myDeviceObservable

```
DeviceObservable it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.myDeviceObservable [private]
```

6.10.3.6 myUsbObservable

```
UsbMeasurementObservable it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.myUsbObservable [private]
```

6.10.3.7 onRecordingReport

```
OnRecordingReport it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.onRecordingReport [private]
```

6.10.3.8 onRecordingResume

```
OnRecordingResume it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.onRecordingResume [private]
```

6.10.3.9 reportUtils

```
ReportUtils it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.reportUtils [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [DeviceDetailInner0Fragment.java](#)

6.11 Riferimenti per la classe it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment

Diagramma delle classi per it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment

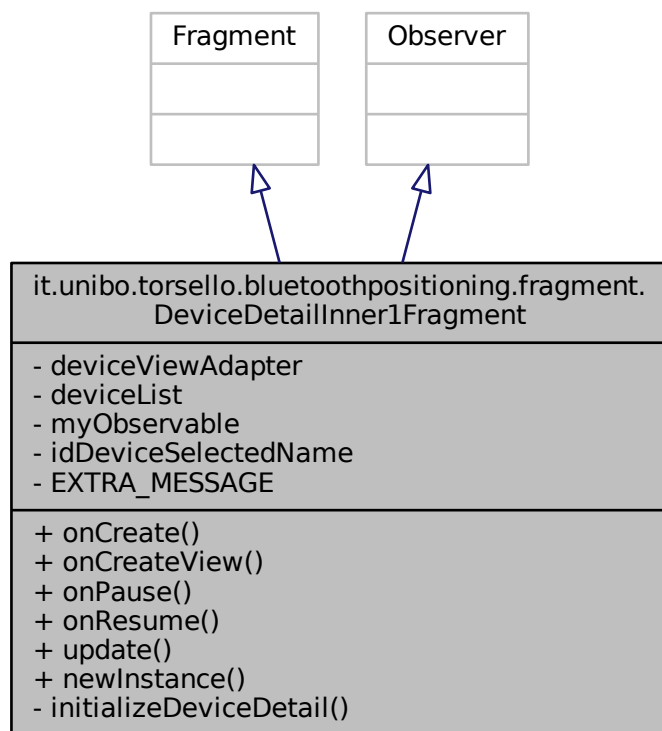
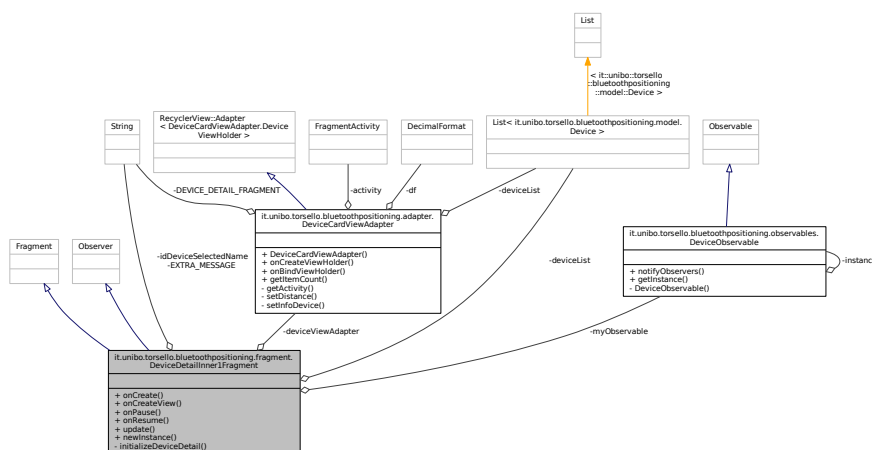


Diagramma di collaborazione per it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment:



Membri pubblici

- void [onCreate](#) (@Nullable Bundle savedInstanceState)
- View [onCreateView](#) (LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState)
- void [onPause](#) ()
- void [onResume](#) ()
- void [update](#) (Observable o, Object arg)

Membri pubblici statici

- static [DeviceDetailInner1Fragment newInstance](#) (String message)

Membri privati

- void [initializeDeviceDetail](#) (View root)

Attributi privati

- [DeviceCardViewAdapter deviceViewAdapter](#)
- List< [Device](#) > [deviceList](#)
- [DeviceObservable myObservable](#)
- String [idDeviceSelectedName](#)

Attributi privati statici

- static final String [EXTRA_MESSAGE](#) = "EXTRA_MESSAGE"

6.11.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.11.2 Documentazione delle funzioni membro**6.11.2.1 initializeDeviceDetail()**

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment.initialize↵
DeviceDetail (
    View root ) [private]

75                                     {
76     // add RecyclerView
77     RecyclerView recyclerView = (RecyclerView) root.findViewById(R.id.recycler_view_detail);
78     recyclerView.setLayoutManager(new LinearLayoutManager(getContext()));
79     recyclerView.setAdapter(deviceViewAdapter);
80 }
```


6.11.2.2 newInstance()

```

static DeviceDetailInner1Fragment it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment.newInstance (
    String message ) [static]

35
36         DeviceDetailInner1Fragment fragment = new DeviceDetailInner1Fragment();
37         Bundle args = new Bundle();
38         args.putString(EXTRA_MESSAGE, message);
39         fragment.setArguments(args);
40         return fragment;
41     }

```

6.11.2.3 onCreate()

```

void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment.onCreate (
    @Nullable Bundle savedInstanceState )

44
45         super.onCreate(savedInstanceState);
46
47         myObservable = DeviceObservable.getInstance();
48
49         idDeviceSelectedName = getArguments().getString(
EXTRA_MESSAGE);
50         deviceList = new ArrayList<>();
51         deviceViewAdapter = new DeviceCardViewAdapter(getActivity(),
deviceList);
52     }

```

6.11.2.4 onCreateView()

```

View it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment.onCreateView (
    LayoutInflater inflater,
    ViewGroup container,
    Bundle savedInstanceState )

55
56         View root = inflater.inflate(R.layout.fragment_device_detail_inner_1, container, false);
57
58         initializeDeviceDetail(root);
59
60         return root;
61     }

```

6.11.2.5 onPause()

```

void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment.onPause ( )

64
65         myObservable.deleteObserver(this);
66         super.onPause();
67     }

```

6.11.2.6 onResume()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment.onResume ( )
```

```
70         {
71             super.onResume();
72             myObservable.addObserver(this);
73         }
```

6.11.2.7 update()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment.update (
    Observable o,
    Object arg )
```

```
83         {
84
85             if (arg instanceof List) {
86
87                 if (!deviceList.isEmpty()) {
88                     deviceList.clear();
89                 }
90
91                 List<Device> devices = (List<Device>) arg;
92
93                 for (Device deviceSelected : devices) {
94                     if (deviceSelected.getFriendlyName().equals(idDeviceSelectedName) ||
95                         deviceSelected.getAddress().equals(idDeviceSelectedName)) {
96                         deviceList.add(deviceSelected);
97                     }
98                 }
99
100                 deviceViewAdapter.notifyDataSetChanged();
101             }
102         }
```

6.11.3 Documentazione dei membri dato

6.11.3.1 deviceList

```
List<Device> it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment.↵
deviceList [private]
```

6.11.3.2 deviceViewAdapter

```
DeviceCardViewAdapter it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1↵
Fragment.deviceViewAdapter [private]
```

6.11.3.3 EXTRA_MESSAGE

```
final String it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment.EXTRA↵
A_MESSAGE = "EXTRA_MESSAGE" [static], [private]
```

6.11.3.4 idDeviceSelectedName

```
String it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment.idDevice↵
SelectedName [private]
```

6.11.3.5 myObservable

```
DeviceObservable it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment.<↔  
myObservable [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [DeviceDetailInner1Fragment.java](#)

6.12 Riferimenti per la classe it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment

Diagramma delle classi per it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment

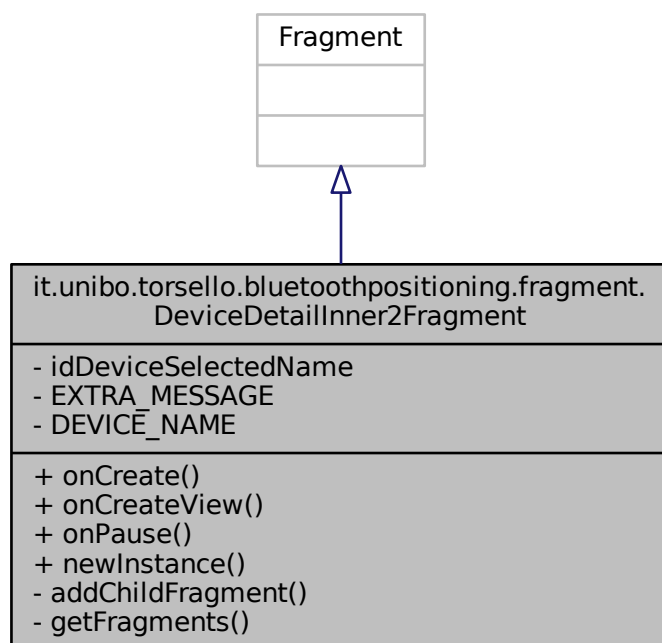
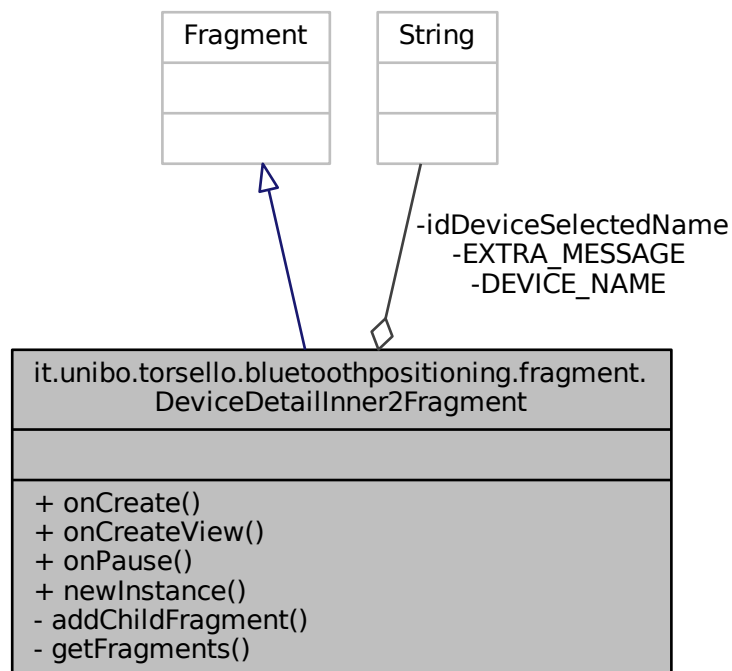


Diagramma di collaborazione per it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment:



Membri pubblici

- void [onCreate](#) (Bundle savedInstanceState)
- View [onCreateView](#) (LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState)
- void [onPause](#) ()

Membri pubblici statici

- static [DeviceDetailInner2Fragment newInstance](#) (String deviceName)

Membri privati

- void [addChildFragment](#) (View root)
- ArrayList< Fragment > [getFragments](#) ()

Attributi privati

- String [idDeviceSelectedName](#)

Attributi privati statici

- static final String `EXTRA_MESSAGE` = "EXTRA_MESSAGE"
- static final String `DEVICE_NAME` = "DEVICE_NAME"

6.12.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.12.2 Documentazione delle funzioni membro

6.12.2.1 addChildFragmentManager()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment.addChild↵
Fragment (
    View root ) [private]

57
58
59     ViewPager mViewPager = (ViewPager) root.findViewById(R.id.view_pager_inner_2);
60
61     // avoid casual fragment's destruction
62     mViewPager.setOffscreenPageLimit(getFragments().size());
63
64     StatePagerAdapter myPagerAdapter = new StatePagerAdapter(getChildFragmentManager(),
getFragments());
65     mViewPager.setAdapter(myPagerAdapter);
66
67     TabLayout tabLayout = (TabLayout) root.findViewById(R.id.sliding_tabs);
68     tabLayout.setupWithViewPager(mViewPager);
69 }
```

6.12.2.2 getFragments()

```
ArrayList<Fragment> it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment.↵
getFragments ( ) [private]

71
72     ArrayList<Fragment> fragments = new ArrayList<>();
73
74     // inner fragment 0
75     ArrayList<String> params1 = new ArrayList<>();
76     params1.add(getString(R.string.chart_arduino));
77     params1.add(getString(R.string.chart_raw_distance));
78     params1.add(getString(R.string.chart_altbeacon));
79     params1.add(getString(R.string.chart_kalman_filter));
80
81     fragments.add(DeviceChartFragment.newInstance("chart1", 1,
idDeviceSelectedName, params1));
82
83     // inner fragment 1
84     ArrayList<String> params2 = new ArrayList<>();
85     params2.add(getString(R.string.chart_arduino));
86     params2.add(getString(R.string.chart_raw_distance));
87     params2.add(getString(R.string.chart_kalman_filter));
88
89     fragments.add(DeviceChartFragment.newInstance("chart2", 2,
idDeviceSelectedName, params2));
90
91     // inner fragment 2
92     ArrayList<String> params3 = new ArrayList<>();
93     params3.add(getString(R.string.chart_arduino));
94     params3.add(getString(R.string.chart_altbeacon));
95     params3.add(getString(R.string.chart_kalman_filter));
96
97     fragments.add(DeviceChartFragment.newInstance("chart3", 3,
idDeviceSelectedName, params3));
98
99     return fragments;
100 }
```

6.12.2.3 newInstance()

```

static DeviceDetailInner2Fragment it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment.newInstance (
    String deviceName ) [static]

27
28
29
30
31
32
33
34
    {
        DeviceDetailInner2Fragment fragment = new DeviceDetailInner2Fragment();
        Bundle args = new Bundle();
        args.putString(EXTRA_MESSAGE, "real time charts");
        args.putString(DEVICE_NAME, deviceName);
        fragment.setArguments(args);
        return fragment;
    }

```

6.12.2.4 onCreate()

```

void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment.onCreate (
    Bundle savedInstanceState )

37
38
39
40
41
    {
        super.onCreate(savedInstanceState);
        idDeviceSelectedName = getArguments().getString(
            DEVICE_NAME);
    }

```

6.12.2.5 onCreateView()

```

View it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment.onCreateView (
    LayoutInflater inflater,
    ViewGroup container,
    Bundle savedInstanceState )

44
45
46
47
48
49
50
    {
        View root = inflater.inflate(R.layout.fragment_device_detail_inner_2, container, false);
        addChildFragment(root);
        return root;
    }

```

6.12.2.6 onPause()

```

void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment.onPause ( )

53
54
55
    {
        super.onPause();
    }

```

6.12.3 Documentazione dei membri dato

6.12.3.1 DEVICE_NAME

```

final String it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment.DEVICE_NAME = "DEVICE_NAME" [static], [private]

```

6.12.3.2 EXTRA_MESSAGE

```
final String it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment.EXTRA_MESSAGE = "EXTRA_MESSAGE" [static], [private]
```

6.12.3.3 idDeviceSelectedName

```
String it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment.idDeviceSelectedName [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [DeviceDetailInner2Fragment.java](#)

6.13 Riferimenti per la classe it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment

Diagramma delle classi per it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment

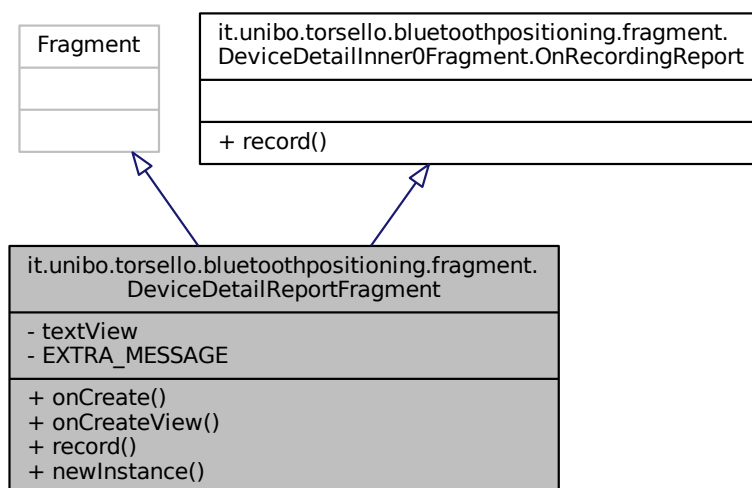
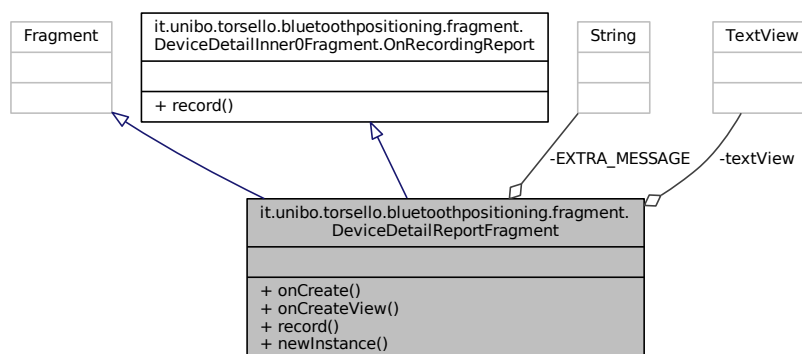


Diagramma di collaborazione per it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment:



Membri pubblici

- void [onCreate](#) (@Nullable Bundle savedInstanceState)
- View [onCreateView](#) (LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState)
- void [record](#) (String newRecord)

Membri pubblici statici

- static [DeviceDetailReportFragment newInstance](#) ()

Attributi privati

- TextView [textView](#)

Attributi privati statici

- static final String [EXTRA_MESSAGE](#) = "EXTRA_MESSAGE"

6.13.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.13.2 Documentazione delle funzioni membro

6.13.2.1 newInstance()

```
static DeviceDetailReportFragment it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment.newInstance ( ) [static]
```

```
27                                     {
28         DeviceDetailReportFragment fragment = new DeviceDetailReportFragment();
29         Bundle args = new Bundle();
30         args.putString(EXTRA\_MESSAGE, "report");
31         fragment.setArguments(args);
32         return fragment;
33     }
```

6.13.2.2 onCreate()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment.onCreate (
    @Nullable Bundle savedInstanceState )
```

```
36                                     {
37         super.onCreate(savedInstanceState);
38
39     }
```


6.13.2.3 onCreateView()

```
View it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment.onCreateView (
    LayoutInflater inflater,
    ViewGroup container,
    Bundle savedInstanceState )
```

```
43                                     {
44     // Inflate the layout for this fragment
45     final View root = inflater.inflate(R.layout.fragment_device_detail_report, container, false);
46
47     textView = (TextView) root.findViewById(R.id.text_view_report);
48
49     return root;
50 }
```

6.13.2.4 record()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment.record (
    String newRecord )
```

Implementa [it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingReport](#).

```
53                                     {
54     textView.setText(newRecord);
55 }
```

6.13.3 Documentazione dei membri dato

6.13.3.1 EXTRA_MESSAGE

```
final String it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment.EXTRA_
A_MESSAGE = "EXTRA_MESSAGE" [static], [private]
```

6.13.3.2 textView

```
TextView it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment.textView
[private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [DeviceDetailReportFragment.java](#)

6.14 Riferimenti per la classe it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment

Diagramma delle classi per it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment

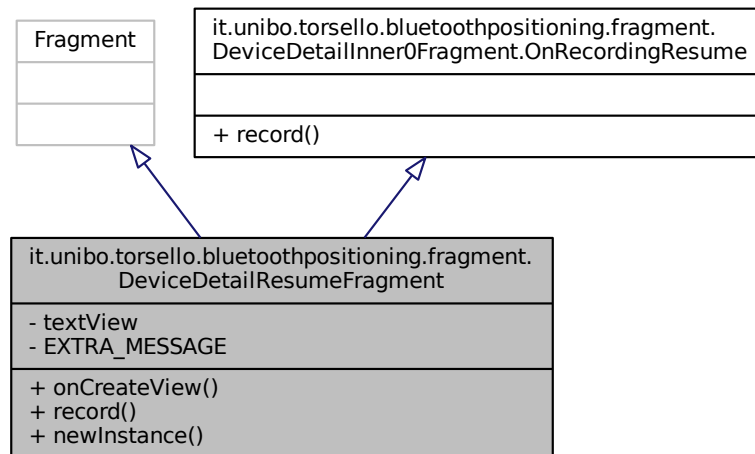
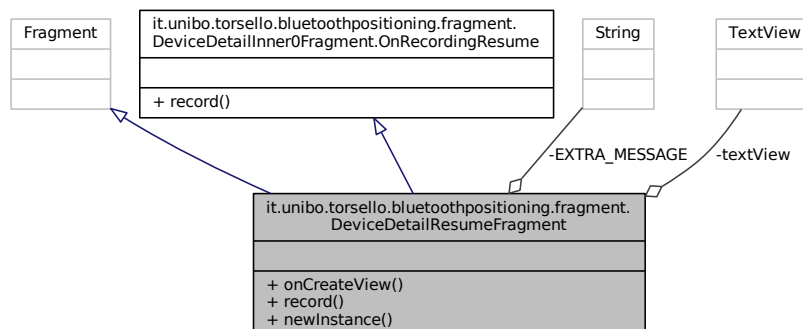


Diagramma di collaborazione per it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment:



Membri pubblici

- View [onCreateView](#) (LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState)
- void [record](#) (String newRecord)

Membri pubblici statici

- static [DeviceDetailResumeFragment newInstance](#) ()

Attributi privati

- TextView [textView](#)

Attributi privati statici

- static final String [EXTRA_MESSAGE](#) = "EXTRA_MESSAGE"

6.14.1 Descrizione dettagliata

Created by federico on 12/10/16.

6.14.2 Documentazione delle funzioni membro

6.14.2.1 newInstance()

static [DeviceDetailResumeFragment](#) it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment.newInstance () [static]

```

27                                     {
28         DeviceDetailResumeFragment fragment = new DeviceDetailResumeFragment();
29         Bundle args = new Bundle();
30         args.putString(EXTRA_MESSAGE, "Resume");
31         fragment.setArguments(args);
32         return fragment;
33     }

```

6.14.2.2 onCreateView()

View it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment.onCreateView (
 LayoutInflater inflater,
 ViewGroup container,
 Bundle savedInstanceState)

```

37                                     {
38         // Inflate the layout for this fragment
39         final View root = inflater.inflate(R.layout.fragment_device_detail_resume, container, false);
40
41         textView = (TextView) root.findViewById(R.id.textview_resume);
42
43         return root;
44     }

```

6.14.2.3 record()

void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment.record (
 String newRecord)

Implementa [it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingResume](#).

```

47                                     {
48         textView.setText(newRecord);
49     }

```

6.14.3 Documentazione dei membri dato

6.14.3.1 EXTRA_MESSAGE

```
final String it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment.EXTRA←  
A_MESSAGE = "EXTRA_MESSAGE" [static], [private]
```

6.14.3.2 textView

```
TextView it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment.textView  
[private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [DeviceDetailResumeFragment.java](#)

6.15 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment`

Diagramma delle classi per `it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment`

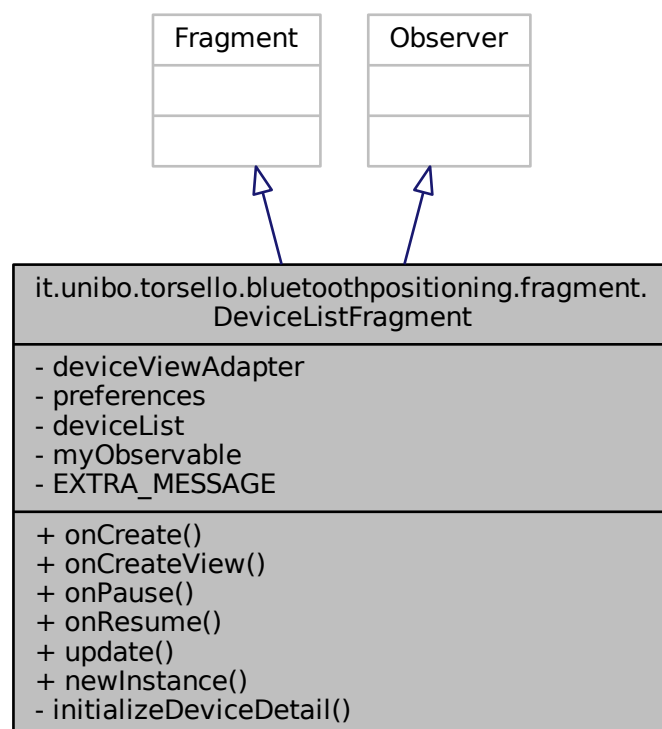
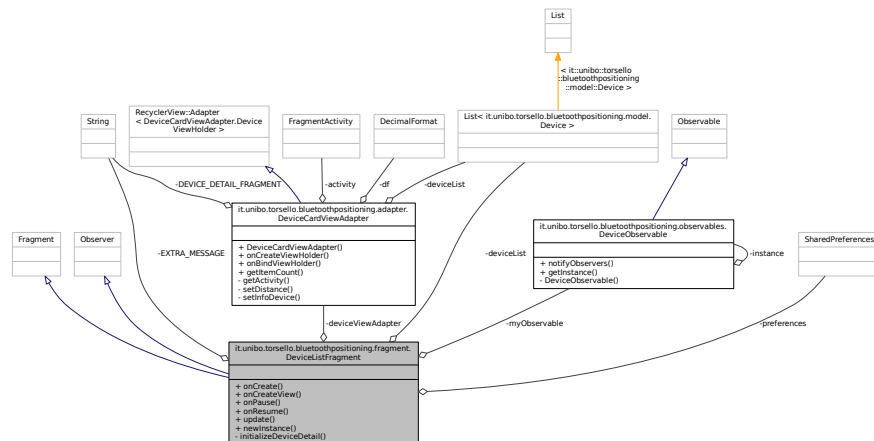


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment`:



Membri pubblici

- void `onCreate` (@Nullable Bundle savedInstanceState)
- View `onCreateView` (LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState)
- void `onPause` ()
- void `onResume` ()
- void `update` (Observable o, Object arg)

Membri pubblici statici

- static `DeviceListFragment newInstance` ()

Membri privati

- void `initializeDeviceDetail` (View root)

Attributi privati

- `DeviceCardViewHolderAdapter deviceViewAdapter`
- `SharedPreferences preferences`
- `List< Device > deviceList`
- `DeviceObservable myObservable`

Attributi privati statici

- static final String `EXTRA_MESSAGE` = "EXTRA_MESSAGE"

6.15.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.15.2 Documentazione delle funzioni membro

6.15.2.1 `initializeDeviceDetail()`

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment.initializeDeviceDetail
(
    View root ) [private]

83                                     {
84     // add RecyclerView
85     RecyclerView recyclerView = (RecyclerView) root.findViewById(R.id.recycler_view);
86     recyclerView.setLayoutManager(new LinearLayoutManager(getContext()));
87     deviceViewAdapter = new DeviceCardViewAdapter(getActivity(),
deviceList);
88     recyclerView.setAdapter(deviceViewAdapter);
89 }
```

6.15.2.2 `newInstance()`

```
static DeviceListFragment it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment.↔
newInstance ( ) [static]

55                                     {
56     DeviceListFragment fragment = new DeviceListFragment();
57     Bundle args = new Bundle();
58     args.putString(EXTRA_MESSAGE, "Scan Device");
59     fragment.setArguments(args);
60     return fragment;
61 }
```

6.15.2.3 `onCreate()`

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment.onCreate (
    @Nullable Bundle savedInstanceState )

64                                     {
65     super.onCreate(savedInstanceState);
66
67     myObservable = DeviceObservable.getInstance();
68
69     deviceList = new ArrayList<>();
70     preferences = getActivity().getSharedPreferences(SettingConstants.SETTINGS_PREFERENCES,
0);
71 }
```

6.15.2.4 `onCreateView()`

```
View it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment.onCreateView (
    LayoutInflater inflater,
    ViewGroup container,
    Bundle savedInstanceState )

74                                     {
75
76     View root = inflater.inflate(R.layout.fragment_device_list, container, false);
77
78     initializeDeviceDetail(root);
79
80     return root;
81 }
```

6.15.2.5 onPause()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment.onPause ( )
```

```
92         {
93         myObservable.deleteObserver(this);
94         super.onPause();
95     }
```

6.15.2.6 onResume()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment.onResume ( )
```

```
98         {
99         super.onResume();
100         myObservable.addObserver(this);
101     }
```

6.15.2.7 update()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment.update (
    Observable o,
    Object arg )
```

```
104         {
105
106         if (arg instanceof List) {
107
108             if (!deviceList.isEmpty()) {
109                 deviceList.clear();
110             }
111
112             List<Device> devices = (List<Device>) arg;
113
114             // optional sorting
115             Collections.sort(devices, new Comparator<Device>() {
116                 public int compare(Device b1, Device b2) {
117                     int sorting = preferences.getInt(SettingConstants.DISTANCE_SORTING, 0);
118                     switch (sorting) {
119                         case 0:
120                             case R.id.radioButton_default_sorting:
121                                 return Double.compare(b1.getIndex(), b2.getIndex());
122                             case R.id.radioButton_color_sorting:
123                                 return Double.compare(b1.getColor(), b2.getColor());
124                             case R.id.radioButton_distance_sorting:
125                                 return Double.compare(b1.getKalmanFilterDistance(), b2.getKalmanFilterDistance(
126                                     ));
127                             } // default sorting (a good basic ordering for the other options)
128                             return Double.compare(b1.getIndex(), b2.getIndex());
129                         }
130                     });
131
132             deviceList.addAll(devices);
133             deviceListAdapter.notifyDataSetChanged();
134         }
```

6.15.3 Documentazione dei membri dato

6.15.3.1 deviceList

```
List<Device> it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment.deviceList
[private]
```

6.15.3.2 `deviceViewAdapter`

```
DeviceCardViewAdapter it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment.↔
deviceViewAdapter [private]
```

6.15.3.3 `EXTRA_MESSAGE`

```
final String it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment.EXTRA_MESSAGE
= "EXTRA_MESSAGE" [static], [private]
```

6.15.3.4 `myObservable`

```
DeviceObservable it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment.myObservable
[private]
```

6.15.3.5 `preferences`

```
SharedPreferences it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment.preferences
[private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [DeviceListFragment.java](#)

6.16 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.observable.DeviceObservable`

Diagramma delle classi per `it.unibo.torsello.bluetoothpositioning.observable.DeviceObservable`

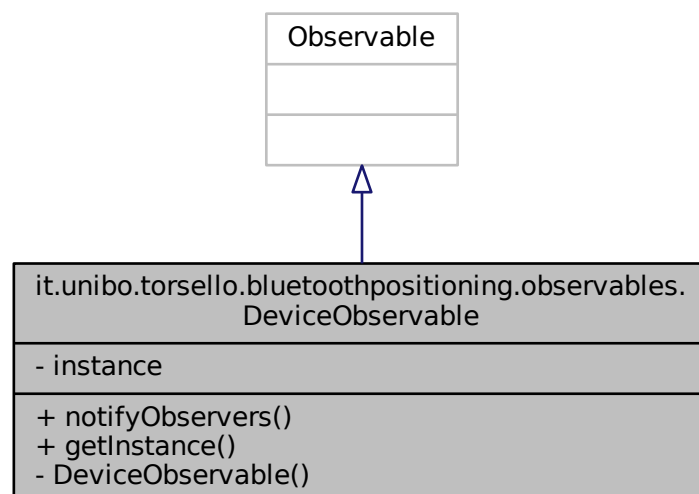
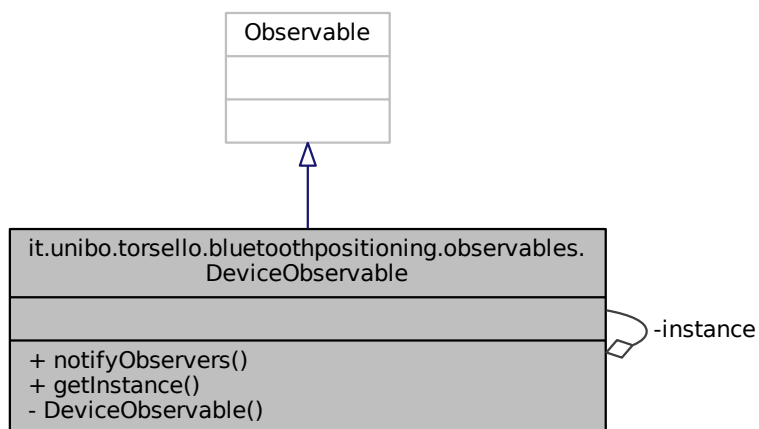


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.observable.DeviceObservable`:



Membri pubblici

- void `notifyObservers` (Object data)

Membri pubblici statici

- static `DeviceObservable getInstance` ()

Membri privati

- `DeviceObservable` ()

Attributi privati statici

- static `DeviceObservable instance` = new `DeviceObservable`()

6.16.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.16.2 Documentazione dei costruttori e dei distruttori

6.16.2.1 DeviceObservable()

```
it.unibo.torsello.bluetoothpositioning.observable.DeviceObservable.DeviceObservable ( ) [private]
```

```

13         {
14             super();
15         }
  
```

6.16.3 Documentazione delle funzioni membro

6.16.3.1 `getInstance()`

```
static DeviceObservable it.unibo.torsello.bluetoothpositioning.observables.DeviceObservable.↵  
getInstance ( ) [static]
```

```
17                                     {  
18         return instance;  
19     }
```

6.16.3.2 `notifyObservers()`

```
void it.unibo.torsello.bluetoothpositioning.observables.DeviceObservable.notifyObservers (↵  
    Object data )
```

```
22                                     {  
23         setChanged();  
24         super.notifyObservers(data);  
25     }
```

6.16.4 Documentazione dei membri dato

6.16.4.1 `instance`

```
DeviceObservable it.unibo.torsello.bluetoothpositioning.observables.DeviceObservable.instance  
= new DeviceObservable() [static], [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [DeviceObservable.java](#)

6.17 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder`↔

Diagramma delle classi per `it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceView`↔
Holder

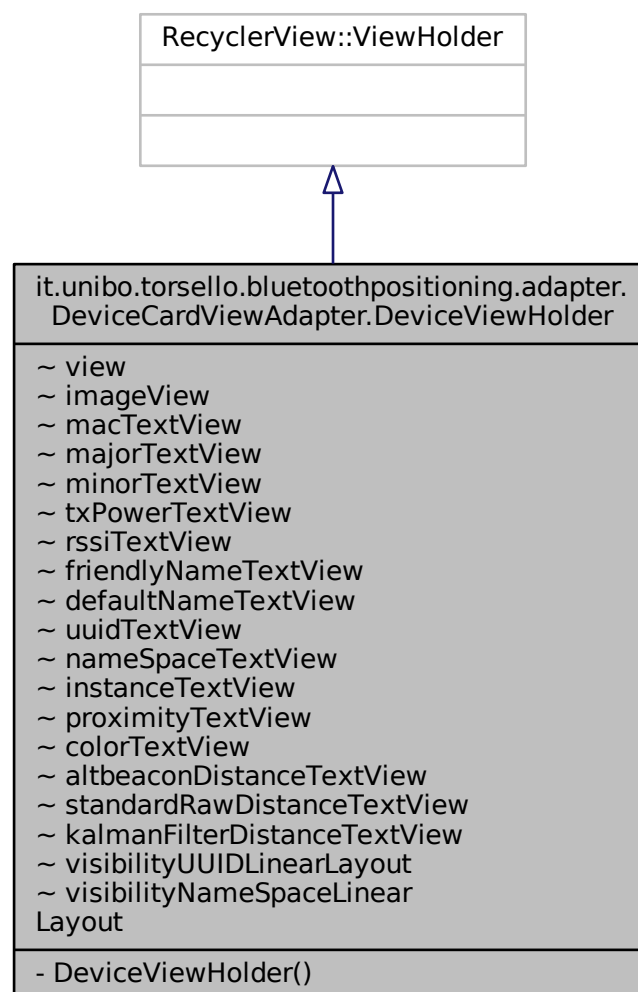
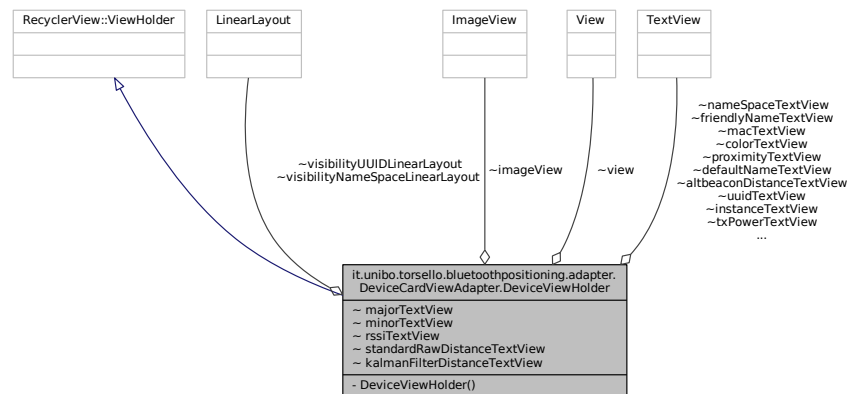


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.Device`↔

ViewHolder:



Attributi con visibilità di package

- View [view](#)
- ImageView [imageView](#)
- TextView [macTextView](#)
- TextView [majorTextView](#)
- TextView [minorTextView](#)
- TextView [txPowerTextView](#)
- TextView [rsiTextView](#)
- TextView [friendlyNameTextView](#)
- TextView [defaultNameTextView](#)
- TextView [uuidTextView](#)
- TextView [nameSpaceTextView](#)
- TextView [instanceTextView](#)
- TextView [proximityTextView](#)
- TextView [colorTextView](#)
- TextView [altbeaconDistanceTextView](#)
- TextView [standardRawDistanceTextView](#)
- TextView [kalmanFilterDistanceTextView](#)
- LinearLayout [visibilityUIIDLinearLayout](#)
- LinearLayout [visibilityNameSpaceLinearLayout](#)

Membri privati

- [DeviceViewHolder](#) (View [view](#))

6.17.1 Documentazione dei costruttori e dei distruttori

6.17.1.1 DeviceViewHolder()

```

it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder.DeviceViewHolder (
    View view ) [private]
  
```

```

250                                     {
251
252         super(view);
253         this.view = view;
254         imageView = (ImageView) view.findViewById(R.id.imageBeacon);
255         defaultNameTextView = (TextView) view.findViewById(R.id.
value_default_name);
256         friendlyNameTextView = (TextView) view.findViewById(R.id.
value_friendly_name);
257         macTextView = (TextView) view.findViewById(R.id.value_mac_address);
258         majorTextView = (TextView) view.findViewById(R.id.value_major);
259         minorTextView = (TextView) view.findViewById(R.id.value_minor);
260         txPowerTextView = (TextView) view.findViewById(R.id.value_power);
261         rssiTextView = (TextView) view.findViewById(R.id.value_rssi);
262         uuidTextView = (TextView) view.findViewById(R.id.value_uuid);
263         nameSpaceTextView = (TextView) view.findViewById(R.id.value_name_space);
264         proximityTextView = (TextView) view.findViewById(R.id.value_proximity);
265         instanceTextView = (TextView) view.findViewById(R.id.value_instance);
266         colorTextView = (TextView) view.findViewById(R.id.value_color);
267
268         altbeaconDistanceTextView = (TextView) view.findViewById(R.id.
value_altbeacon_distance);
269         kalmanFilterDistanceTextView = (TextView)
view.findViewById(R.id.value_kalman_filter_distance);
270         standardRawDistanceTextView = (TextView)
view.findViewById(R.id.value_standard_raw_distance);
271
272         visibilityUUIDLinearLayout = (LinearLayout)
view.findViewById(R.id.visibility_uuid_minor_major_nmb);
273         visibilityNameSpaceLinearLayout = (LinearLayout)
view.findViewById(R.id.visibilityNameSpace_Instance);
274     }

```

6.17.2 Documentazione dei membri dato

6.17.2.1 altbeaconDistanceTextView

```

TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceView↔
Holder.altbeaconDistanceTextView [package]

```

6.17.2.2 colorTextView

```

TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceView↔
Holder.colorTextView [package]

```

6.17.2.3 defaultNameTextView

```

TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceView↔
Holder.defaultNameTextView [package]

```

6.17.2.4 friendlyNameTextView

```

TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceView↔
Holder.friendlyNameTextView [package]

```

6.17.2.5 imageView

```

ImageView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceView↔
Holder.imageView [package]

```

6.17.2.6 instanceTextView

```

TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceView↔
Holder.instanceTextView [package]

```

6.17.2.7 kalmanFilterDistanceTextView

```
TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder.kalmanFilterDistanceTextView [package]
```

6.17.2.8 macTextView

```
TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder.macTextView [package]
```

6.17.2.9 majorTextView

```
TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder.majorTextView [package]
```

6.17.2.10 minorTextView

```
TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder.minorTextView [package]
```

6.17.2.11 nameSpaceTextView

```
TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder.nameSpaceTextView [package]
```

6.17.2.12 proximityTextView

```
TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder.proximityTextView [package]
```

6.17.2.13 rssiTextView

```
TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder.rssiTextView [package]
```

6.17.2.14 standardRawDistanceTextView

```
TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder.standardRawDistanceTextView [package]
```

6.17.2.15 txPowerTextView

```
TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder.txPowerTextView [package]
```

6.17.2.16 uuidTextView

```
TextView it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder.uuidTextView [package]
```

6.17.2.17 view

```
View it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder.↔
view [package]
```

6.17.2.18 visibilityNameSpaceLinearLayout

```
LinearLayout it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceView↔
Holder.visibilityNameSpaceLinearLayout [package]
```

6.17.2.19 visibilityUIDLinearLayout

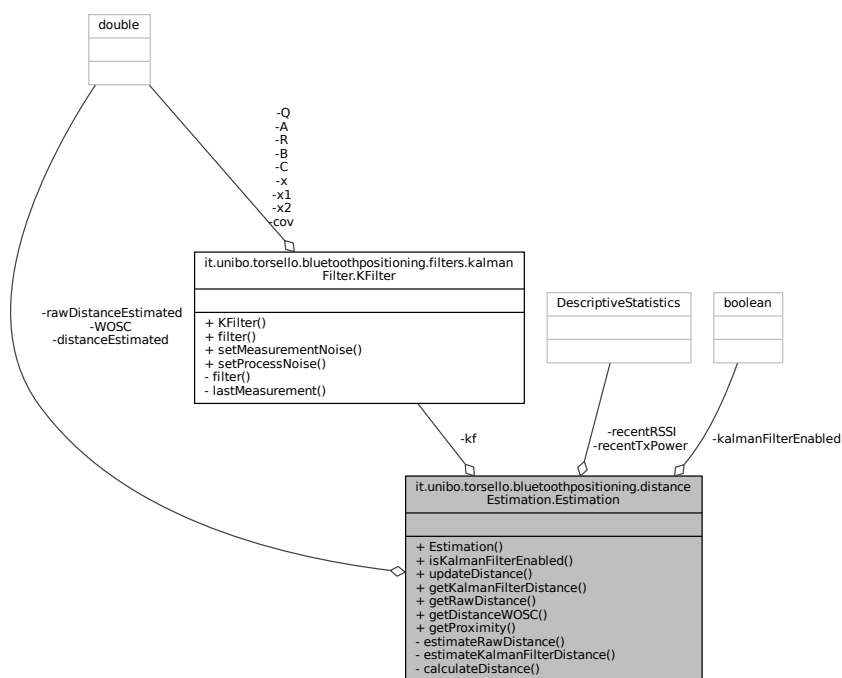
```
LinearLayout it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceView↔
Holder.visibilityUIDLinearLayout [package]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [DeviceCardViewAdapter.java](#)

6.18 Riferimenti per la classe it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation

Diagramma di collaborazione per it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation:



Membri pubblici

- `Estimation ()`
- boolean `isKalmanFilterEnabled ()`
- void `updateDistance (Beacon b, double processNoise)`
- double `getKalmanFilterDistance ()`
- double `getRawDistance ()`
- double `getDistanceWOSC ()`
- String `getProximity ()`

Membri privati

- void `estimateRawDistance (Beacon b)`
- void `estimateKalmanFilterDistance (Beacon b, double processNoise)`
- double `calculateDistance (double txPower, double rssi)`

Attributi privati

- DescriptiveStatistics `recentRSSI`
- DescriptiveStatistics `recentTxPower`
- `KFilter kf`
- double `distanceEstimated`
- double `rawDistanceEstimated`
- double `WOSC`
- boolean `kalmanFilterEnabled`

6.18.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.18.2 Documentazione dei costruttori e dei distruttori

6.18.2.1 Estimation()

```
it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.Estimation ( )
```

```
25         {
26
27         rawDistanceEstimated = 0;
28
29         // limit on the number of values that can be stored in the dataset
30         recentRSSI = new DescriptiveStatistics();
31         recentRSSI.setWindowSize(KFilterConstants.WINDOW);
32         recentTxPower = new DescriptiveStatistics();
33         recentTxPower.setWindowSize(KFilterConstants.WINDOW);
34
35         distanceEstimated = 0;
36         WOSC = 0;
37
38         kf = new KFilterBuilder()
39             // filter for RSSI
40             .R(KFilterConstants.INITIAL_PROCESS_NOISE) // Initial process noise
41             .Q(KFilterConstants.INITIAL_MEASUREMENT_NOISE) // Initial measurement noise
42             .build();
43     }
```


6.18.3 Documentazione delle funzioni membro

6.18.3.1 calculateDistance()

```
double it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.calculateDistance
(
    double txPower,
    double rssi ) [private]

91                                     {
92
93     if (rssi == 0.0D) {
94         return -1.0D; // if we cannot determine accuracy, return -1.
95     }
96
97     double ratio = (rssi * 1.0D) / txPower;
98     if (ratio < 1.0D) {
99         return Math.pow(ratio, 10.0D);
100     }
101
102     // return (0.89976D * Math.pow(ratio, 7.7095D)) + 0.125D;
103     return (0.89976D * Math.pow(ratio, 7.7095D)) + 0.111D;
104 }
```

6.18.3.2 estimateKalmanFilterDistance()

```
void it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.estimateKalman↔
FilterDistance (
    Beacon b,
    double processNoise ) [private]

61                                     {
62
63     if (!(processNoise > 0)){
64         kalmanFilterEnabled = false;
65     } else {
66         kalmanFilterEnabled = true;
67
68         recentRSSI.addValue(b.getRssi());
69         recentTxPower.addValue(b.getTxPower());
70
71         // Update measurement noise continually
72         double mNoise = Math.sqrt((100 * 9 / Math.log(10)) *
73             Math.log(1 + Math.pow(recentRSSI.getMean() /
recentRSSI.getStandardDeviation(), 2)));
74
75         if (!Double.isInfinite(mNoise) && !Double.isNaN(mNoise)) {
76             kf.setMeasurementNoise(mNoise);
77         }
78
79         kf.setProcessNoise(processNoise);
80
81         // update measurement, z parameter
82         double lastFilteredReading = kf.filter(recentRSSI.getPercentile(50));
83
84         WOSC = calculateDistance(b.getTxPower(), lastFilteredReading);
85
86         distanceEstimated = calculateDistance(
recentTxPower.getPercentile(50), lastFilteredReading);
87     }
88 }
```

6.18.3.3 estimateRawDistance()

```
void it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.estimateRawDistance
(
    Beacon b ) [private]

56                                     {
57     // raw distance
58     rawDistanceEstimated = calculateDistance(b.getTxPower(), b.
getRssi());
59 }
```

6.18.3.4 `getDistanceWOSC()`

```
double it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.getDistanceWOSC (
)
```

```
114                                     {
115         return WOSC;
116     }
```

6.18.3.5 `getKalmanFilterDistance()`

```
double it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.getKalmanFilter↵
Distance ( )
```

```
106                                     {
107         return distanceEstimated;
108     }
```

6.18.3.6 `getProximity()`

```
String it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.getProximity ( )
```

```
118                                     {
119         double proximity = distanceEstimated;
120         String accuracy;
121
122         if (proximity <= 0) {
123             accuracy = "unknown";
124         } else if (proximity <= 0.5) {
125             accuracy = "immediate";
126         } else if (proximity <= 4.0) {
127             accuracy = "near";
128         } else {
129             accuracy = "far";
130         }
131         return accuracy;
132     }
```

6.18.3.7 `getRawDistance()`

```
double it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.getRawDistance ( )
```

```
110                                     {
111         return rawDistanceEstimated;
112     }
```

6.18.3.8 `isKalmanFilterEnabled()`

```
boolean it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.isKalmanFilter↵
Enabled ( )
```

```
45                                     {
46         return kalmanFilterEnabled;
47     }
```

6.18.3.9 updateDistance()

```
void it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.updateDistance (
    Beacon b,
    double processNoise )

49                                     {
50
51     estimateRawDistance(b);
52
53     estimateKalmanFilterDistance(b,processNoise);
54 }
```

6.18.4 Documentazione dei membri dato

6.18.4.1 distanceEstimated

```
double it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.distanceEstimated
[private]
```

6.18.4.2 kalmanFilterEnabled

```
boolean it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.kalmanFilter↔
Enabled [private]
```

6.18.4.3 kf

```
KFilter it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.kf [private]
```

6.18.4.4 rawDistanceEstimated

```
double it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.rawDistance↔
Estimated [private]
```

6.18.4.5 recentRSSI

```
DescriptiveStatistics it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.↔
recentRSSI [private]
```

6.18.4.6 recentTxPower

```
DescriptiveStatistics it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.↔
recentTxPower [private]
```

6.18.4.7 WOSC

```
double it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation.WOSC [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [Estimation.java](#)

6.19 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.extra.FABBehavior`

Diagramma delle classi per `it.unibo.torsello.bluetoothpositioning.extra.FABBehavior`

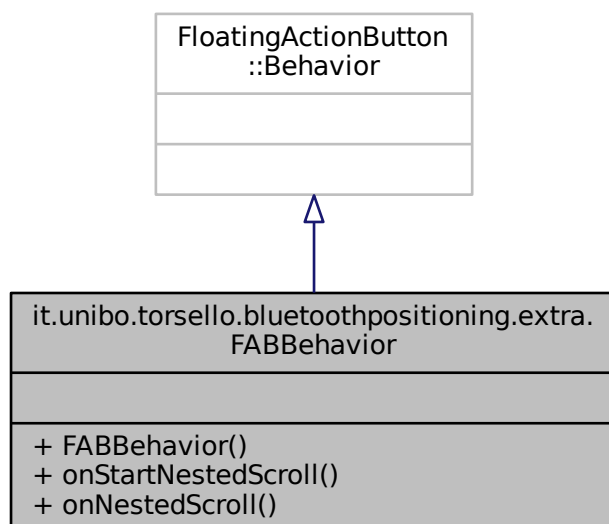
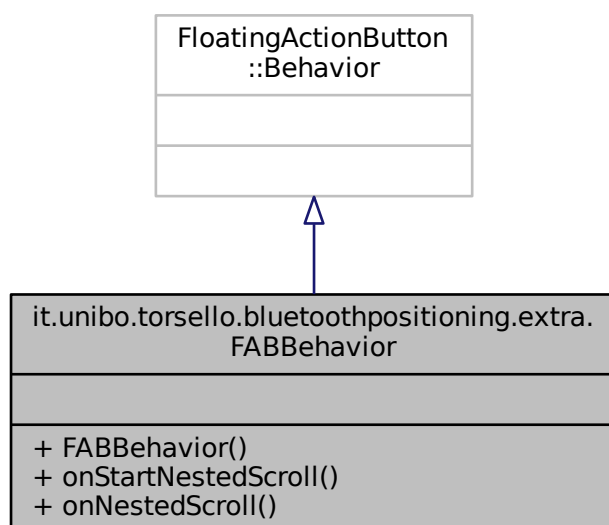


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.extra.FABBehavior`:



Membri pubblici

- [FABBehavior](#) (Context context, AttributeSet attrs)
- boolean [onStartNestedScroll](#) (CoordinatorLayout coordinatorLayout, final FloatingActionButton child, View directTargetChild, View target, int nestedScrollAxes)
- void [onNestedScroll](#) (CoordinatorLayout coordinatorLayout, final FloatingActionButton child, View target, int dxConsumed, int dyConsumed, int dxUnconsumed, int dyUnconsumed)

6.19.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.19.2 Documentazione dei costruttori e dei distruttori

6.19.2.1 FABBehavior()

```
it.unibo.torsello.bluetoothpositioning.extra.FABBehavior.FABBehavior (
    Context context,
    AttributeSet attrs )
```

```
18                                     {
19         super();
20     }
```

6.19.3 Documentazione delle funzioni membro

6.19.3.1 onNestedScroll()

```
void it.unibo.torsello.bluetoothpositioning.extra.FABBehavior.onNestedScroll (
    CoordinatorLayout coordinatorLayout,
    final FloatingActionButton child,
    View target,
    int dxConsumed,
    int dyConsumed,
    int dxUnconsumed,
    int dyUnconsumed )
```

```
34
35     {
36         super.onNestedScroll(coordinatorLayout, child, target, dxConsumed, dyConsumed, dxUnconsumed,
37                               dyUnconsumed);
38         if ((dyConsumed > 0 || dyUnconsumed == 0) && child.getVisibility() == View.VISIBLE) {
39             child.hide();
40             new Handler().postDelayed(new Runnable() {
41                 @Override
42                 public void run() {
43                     child.show();
44                 }
45             }, 1000);
46         }
47     }
```

6.19.3.2 `onStartNestedScroll()`

```

boolean it.unibo.torsello.bluetoothpositioning.extra.FABBehavior.onStartNestedScroll (
    CoordinatorLayout coordinatorLayout,
    final FloatingActionButton child,
    View directTargetChild,
    View target,
    int nestedScrollAxes )

24
25
26 //      return nestedScrollAxes == ViewCompat.SCROLL_AXIS_VERTICAL ||
27 //      super.onStartNestedScroll(coordinatorLayout, child, directTargetChild, target,
28 //      nestedScrollAxes);
29      return true;
30 }

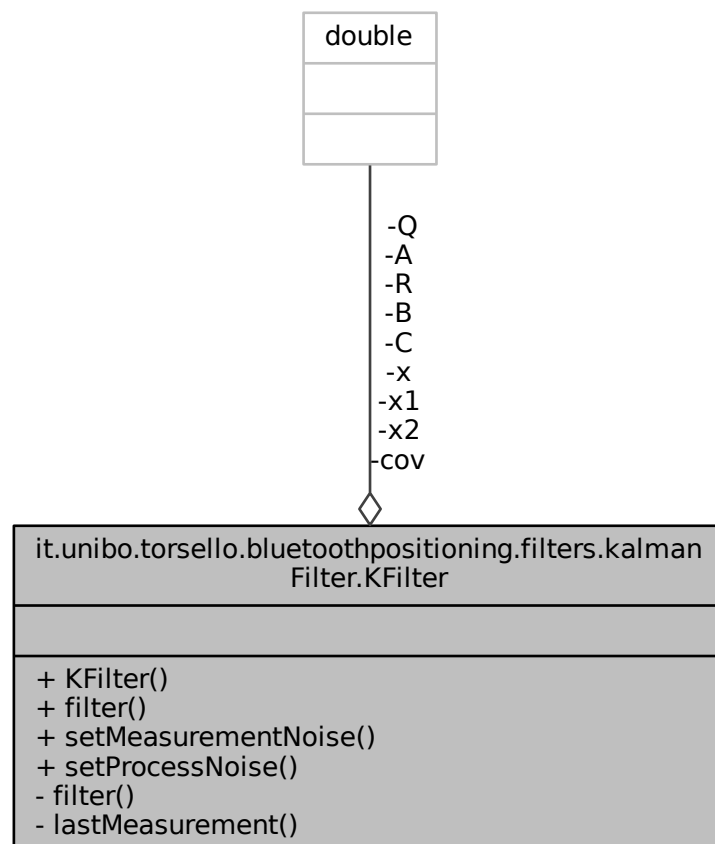
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [FABBehavior.java](#)

6.20 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter`

Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter`:



Membri pubblici

- `KFilter` (double `R`, double `Q`, double `A`, double `B`, double `C`)
- double `filter` (double `z`)
- void `setMeasurementNoise` (double `noise`)
- void `setProcessNoise` (double `noise`)

Membri privati

- double `filter` (double `z`, double `u`)
- double `lastMeasurement` ()

Attributi privati

- double `R`
- double `Q`
- double `A`
- double `B`
- double `C`
- double `cov`
- double `x`
- double `x1`
- double `x2`

6.20.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.20.2 Documentazione dei costruttori e dei distruttori

6.20.2.1 KFilter()

```
it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.KFilter (
    double R,
    double Q,
    double A,
    double B,
    double C )
```

Create 1-dimensional kalman filter

Parametri

<i>R</i>	Process noise
<i>Q</i>	Measurement noise
<i>A</i>	State vector
<i>B</i>	Control vector
<i>C</i>	Measurement vector

```

28                                     {
29
30         this.R = R;
31         this.Q = Q;
32         this.A = A;
33         this.B = B;
34         this.C = C;
35
36         cov = Double.NaN;
37         x = Double.NaN;
38     }

```

6.20.3 Documentazione delle funzioni membro

6.20.3.1 `filter()` [1/2]

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.filter (
    double z )
```

```

41                                     {
42         return filter(z, 0);
43     }

```

6.20.3.2 `filter()` [2/2]

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.filter (
    double z,
    double u ) [private]
```

Filter a new value

Parametri

z	Measurement
u	Control

Restituisce

x

```

52                                     {
53
54         if (Double.isNaN(x)) {
55             x = (1 / C) * z;
56             x1 = x;
57             x2 = x1;
58             cov = (1 / C) * Q * (1 / C);
59         } else {
60
61             // Calculate previous update step
62             B = (x - x1) / 2;
63
64             // Compute prediction
65             double predX = (A * x) + (B * u);
66             double predCov = ((A * cov) * A) + R;
67
68             // Kalman gain
69             double K = predCov * C * (1 / ((C * predCov * C) + Q));
70
71             // Correction
72             x1 = x;
73             x = predX + K * (z - (C * predX));
74             cov = predCov - (K * C * predCov);
75         }

```



```

76
77     return x;
78 }

```

6.20.3.3 lastMeasurement()

```

double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.lastMeasurement ( )
[private]

```

Return the last filtered measurement

Restituisce

x Estimated signal without noise

```

85                                     {
86     return x;
87 }

```

6.20.3.4 setMeasurementNoise()

```

void it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.setMeasurementNoise (
    double noise )

```

Set measurement noise INITIAL_MEASUREMENT_NOISE

Parametri

<i>noise</i>	Measurement noise
--------------	-------------------

```

94                                     {
95     Q = noise;
96 }

```

6.20.3.5 setProcessNoise()

```

void it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.setProcessNoise (
    double noise )

```

Set the process noise INITIAL_PROCESS_NOISE

Parametri

<i>noise</i>	Process noise
--------------	---------------

```

103                                     {
104     R = noise;
105 }

```

6.20.4 Documentazione dei membri dato

6.20.4.1 A

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.A [private]
```

6.20.4.2 B

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.B [private]
```

6.20.4.3 C

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.C [private]
```

6.20.4.4 cov

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.cov [private]
```

6.20.4.5 Q

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.Q [private]
```

6.20.4.6 R

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.R [private]
```

6.20.4.7 x

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.x [private]
```

6.20.4.8 x1

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.x1 [private]
```

6.20.4.9 x2

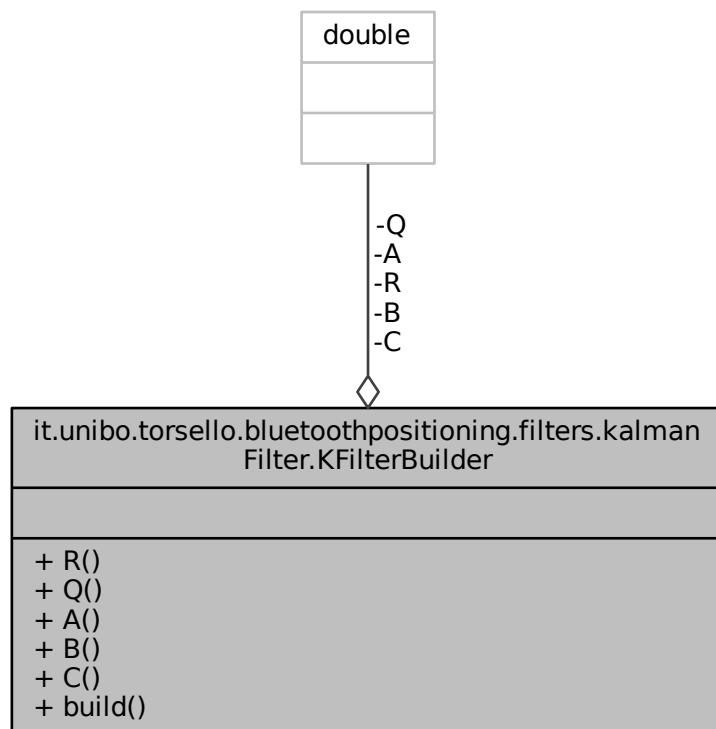
```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter.x2 [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [KFilter.java](#)

6.21 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder`

Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder`:



Membri pubblici

- [KFilterBuilder R](#) (double R)
- [KFilterBuilder Q](#) (double Q)
- [KFilterBuilder A](#) (double A)
- [KFilterBuilder B](#) (double B)
- [KFilterBuilder C](#) (double C)
- [KFilter build](#) ()

Attributi privati

- double [R](#) = 1
- double [Q](#) = 1
- double [A](#) = 1
- double [B](#) = 0
- double [C](#) = 1

6.21.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

Simple builder class for 1-dimensional Kalman filter with predefined

6.21.2 Documentazione delle funzioni membro

6.21.2.1 `A()`

```
KFilterBuilder it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder.A (
    double A )

27         {
28     this.A = A;
29     return this;
30 }
```

6.21.2.2 `B()`

```
KFilterBuilder it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder.B (
    double B )

32         {
33     this.B = B;
34     return this;
35 }
```

6.21.2.3 `build()`

```
KFilter it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder.build ( )

42         {
43     return new KFilter(R, Q, A, B, C);
44 }
```

6.21.2.4 `C()`

```
KFilterBuilder it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder.C (
    double C )

37         {
38     this.C = C;
39     return this;
40 }
```

6.21.2.5 `Q()`

```
KFilterBuilder it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder.Q (
    double Q )

22         {
23     this.Q = Q;
24     return this;
25 }
```

6.21.2.6 R()

```
KFilterBuilder it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder.R (  
    double R )
```

```
17                                     {  
18     this.R = R;  
19     return this;  
20 }
```

6.21.3 Documentazione dei membri dato

6.21.3.1 A

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder.A = 1 [private]
```

6.21.3.2 B

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder.B = 0 [private]
```

6.21.3.3 C

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder.C = 1 [private]
```

6.21.3.4 Q

```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder.Q = 1 [private]
```

6.21.3.5 R

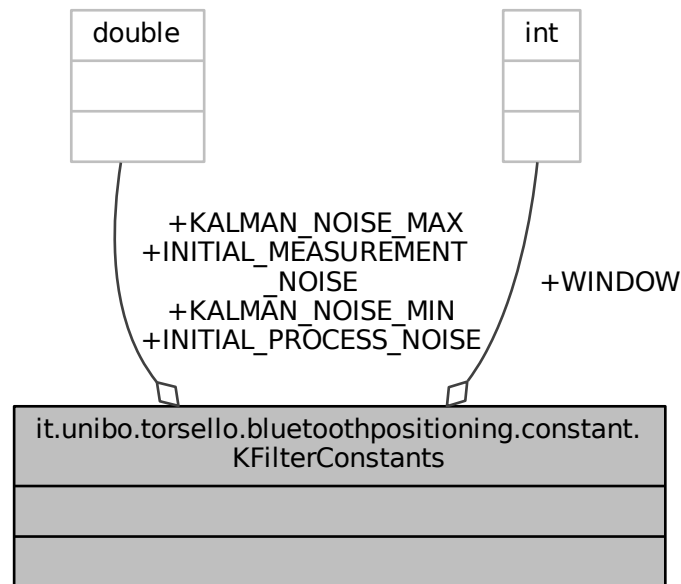
```
double it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder.R = 1 [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [KFilterBuilder.java](#)

6.22 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.constant.KFilterConstants`

Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.constant.KFilterConstants`:



Attributi pubblici statici

- static final double `KALMAN_NOISE_MIN` = 0D
- static final double `KALMAN_NOISE_MAX` = 5D
- static final double `INITIAL_PROCESS_NOISE` = 5D
- static final double `INITIAL_MEASUREMENT_NOISE` = 5D
- static final int `WINDOW` = 5

6.22.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.22.2 Documentazione dei membri dato

6.22.2.1 `INITIAL_MEASUREMENT_NOISE`

```
final double it.unibo.torsello.bluetoothpositioning.constant.KFilterConstants.INITIAL_MEASUREMENT_NOISE = 5D [static]
```

6.22.2.2 INITIAL_PROCESS_NOISE

```
final double it.unibo.torsello.bluetoothpositioning.constant.KFilterConstants.INITIAL_PROCES←  
S_NOISE = 5D [static]
```

6.22.2.3 KALMAN_NOISE_MAX

```
final double it.unibo.torsello.bluetoothpositioning.constant.KFilterConstants.KALMAN_NOISE_MAX  
= 5D [static]
```

6.22.2.4 KALMAN_NOISE_MIN

```
final double it.unibo.torsello.bluetoothpositioning.constant.KFilterConstants.KALMAN_NOISE_MIN  
= 0D [static]
```

6.22.2.5 WINDOW

```
final int it.unibo.torsello.bluetoothpositioning.constant.KFilterConstants.WINDOW = 5 [static]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [KFilterConstants.java](#)

6.23 Riferimenti per la classe it.unibo.torsello.bluetoothpositioning.activities.MainActivity

Diagramma delle classi per it.unibo.torsello.bluetoothpositioning.activities.MainActivity

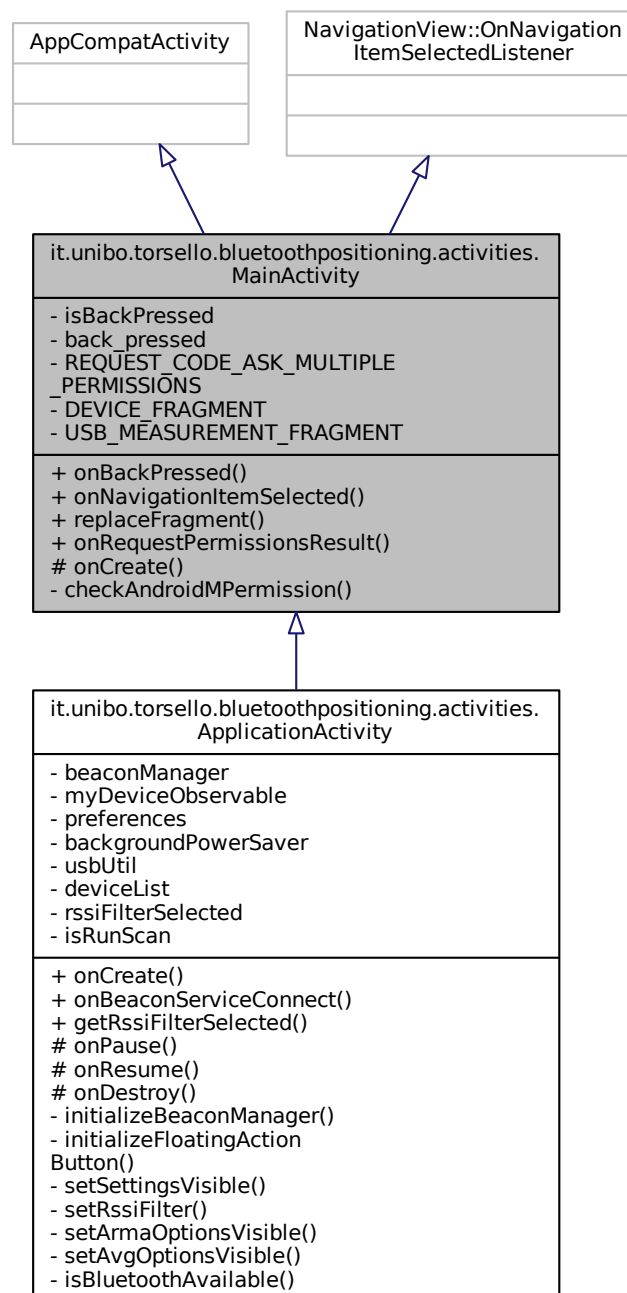
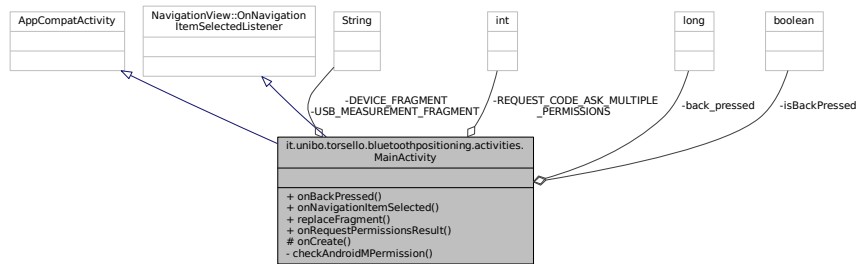


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.activities.MainActivity`:



Membri pubblici

- void `onBackPressed()`
- boolean `onNavigationItemSelectedListener()` (MenuItem item)
- void `replaceFragment()` (String fragTag)
- void `onRequestPermissionsResult()` (int requestCode, @NonNull String permissions[], @NonNull int[] grantResults)

Membri protetti

- void `onCreate()` (Bundle savedInstanceState)

Membri privati

- void `checkAndroidMPermission()`

Attributi privati

- boolean `isBackPressed` = false
- long `back_pressed`
- final int `REQUEST_CODE_ASK_MULTIPLE_PERMISSIONS` = 124

Attributi privati statici

- static final String `DEVICE_FRAGMENT` = "device"
- static final String `USB_MEASUREMENT_FRAGMENT` = "usb measurement"

6.23.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.23.2 Documentazione delle funzioni membro

6.23.2.1 `checkAndroidMPPermission()`

```
void it.unibo.torsello.bluetoothpositioning.activities.MainActivity.checkAndroidMPPermission (
) [private]
```

```
165                                     {
166
167         if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {
168             final List<String> permissions = new ArrayList<>();
169
170             if (checkSelfPermission(Manifest.permission.ACCESS_FINE_LOCATION)
171                 != PackageManager.PERMISSION_GRANTED) {
172                 permissions.add(Manifest.permission.ACCESS_FINE_LOCATION);
173             }
174
175             if (checkSelfPermission(Manifest.permission.ACCESS_COARSE_LOCATION)
176                 != PackageManager.PERMISSION_GRANTED) {
177                 permissions.add(Manifest.permission.ACCESS_COARSE_LOCATION);
178             }
179
180             if (!permissions.isEmpty()) {
181                 new AlertDialog.Builder(this)
182                     .setTitle(R.string.dialog_location_access_title)
183                     .setMessage(R.string.dialog_bluetooth_text)
184                     .setPositiveButton(android.R.string.ok, null)
185                     .setOnDismissListener(new DialogInterface.OnDismissListener() {
186                         @TargetApi(23)
187                         @Override
188                         public void onDismiss(DialogInterface dialog) {
189                             requestPermissions(permissions.toArray(new String[permissions.size()]),
190                                 REQUEST_CODE_ASK_MULTIPLE_PERMISSIONS
191                             );
192                         }
193                     }).show();
194             }
195         }
196     }
```

6.23.2.2 `onBackPressed()`

```
void it.unibo.torsello.bluetoothpositioning.activities.MainActivity.onBackPressed ( )
```

```
68                                     {
69
70         DrawerLayout drawer = (DrawerLayout) findViewById(R.id.drawer_layout);
71         if (drawer.isDrawerOpen(GravityCompat.START)) {
72             drawer.closeDrawer(GravityCompat.START);
73         } else if (drawer.isDrawerOpen(GravityCompat.END)) {
74             drawer.closeDrawer(GravityCompat.END);
75         } else {
76
77             replaceFragment(DEVICE_FRAGMENT);
78
79             final long DOUBLE_PRESS_INTERVAL = 1500L;
80             if (!isBackPressed || back_pressed + DOUBLE_PRESS_INTERVAL <= System.
currentTimeMillis()) {
81                 isBackPressed = true;
82                 FloatingActionButton fab = (FloatingActionButton) findViewById(R.id.fab);
83                 assert fab != null;
84                 Snackbar.make(fab, R.string.snackBar_exit, Snackbar.LENGTH_SHORT).show();
85             } else {
86                 super.finish();
87             }
88             back_pressed = System.currentTimeMillis();
89         }
90     }
```

6.23.2.3 onCreate()

```

void it.unibo.torsello.bluetoothpositioning.activities.MainActivity.onCreate (
    Bundle savedInstanceState ) [protected]

45                                     {
46     super.onCreate(savedInstanceState);
47     setContentView(R.layout.activity_main);
48
49     Toolbar toolbar = (Toolbar) findViewById(R.id.toolbar);
50     setSupportActionBar(toolbar);
51
52     DrawerLayout drawer = (DrawerLayout) findViewById(R.id.drawer_layout);
53     ActionBarDrawerToggle toggle = new ActionBarDrawerToggle(
54         this, drawer, toolbar, R.string.navigation_drawer_open, R.string.navigation_drawer_close);
55     drawer.addDrawerListener(toggle);
56     toggle.syncState();
57
58     ((NavigationView) findViewById(R.id.nav_view)).setNavigationItemSelectedListener(this);
59
60     ((NavigationView) findViewById(R.id.nav_view2)).setNavigationItemSelectedListener(this);
61
62     replaceFragment(DRIVER_FRAGMENT);
63
64     checkAndroidMPPermission();
65 }

```

6.23.2.4 onNavigationItemSelectedListener()

```

boolean it.unibo.torsello.bluetoothpositioning.activities.MainActivity.onNavigationItemSelectedListener←
Selected (
    MenuItem item )

94                                     {
95
96     DrawerLayout drawer = (DrawerLayout) findViewById(R.id.drawer_layout);
97
98     // Handle navigation view item clicks here.
99     switch (item.getItemId()) {
100         case R.id.nav_home:
101             replaceFragment(DRIVER_FRAGMENT);
102             break;
103         case R.id.nav_settings:
104             drawer.openDrawer(GravityCompat.END);
105             break;
106         case R.id.nav_measurement:
107             replaceFragment(USB_MEASUREMENT_FRAGMENT);
108             break;
109     }
110
111     if (drawer.isDrawerOpen(GravityCompat.START)) {
112         drawer.closeDrawer(GravityCompat.START);
113     }
114
115     return true;
116 }

```

6.23.2.5 onRequestPermissionsResult()

```

void it.unibo.torsello.bluetoothpositioning.activities.MainActivity.onRequestPermissionsResult
(
    int requestCode,
    @NonNull String permissions[],
    @NonNull int [] grantResults )

```

```

138                                     {
139         switch (requestCode) {
140             case REQUEST_CODE_ASK_MULTIPLE_PERMISSIONS:
141                 for (int i = 0; i < permissions.length; i++) {
142                     if (grantResults[i] == PackageManager.PERMISSION_GRANTED) {
143                         Log.d(TAG_CLASS, "Permission Granted: " + permissions[i]);
144                     } else if (grantResults[i] == PackageManager.PERMISSION_DENIED) {
145                         Log.d(TAG_CLASS, "Permission Denied: " + permissions[i]);
146                         new AlertDialog.Builder(this)
147                             .setTitle(R.string.dialog_permissions_location_access_title)
148                             .setMessage(R.string.dialog_permissions_location_access_text)
149                             .setPositiveButton(android.R.string.ok, null)
150                             .setOnDismissListener(new DialogInterface.OnDismissListener() {
151
152                                 @Override
153                                 public void onDismiss(DialogInterface dialog) {
154                                     }
155
156                                 }).show();
157                     }
158                 }
159                 break;
160             default:
161                 super.onRequestPermissionsResult(requestCode, permissions, grantResults);
162         }
163     }

```

6.23.2.6 `replaceFragment()`

```

void it.unibo.torsello.bluetoothpositioning.activities.MainActivity.replaceFragment (
    String fragTag )

```

```

118                                     {
119         Fragment currentFragment = getSupportFragmentManager().findFragmentByTag(fragTag);
120         switch (fragTag) {
121             case DEVICE_FRAGMENT:
122                 currentFragment = DeviceListFragment.newInstance();
123                 break;
124             case USB_MEASUREMENT_FRAGMENT:
125                 currentFragment = UsbMeasurementFragment.newInstance();
126                 break;
127         }
128         if (currentFragment != null) {
129             getSupportFragmentManager().beginTransaction()
130                 .replace(R.id.contentMainLayout, currentFragment, fragTag)
131                 .commit();
132         }
133     }
134 }

```

6.23.3 Documentazione dei membri dato

6.23.3.1 `back_pressed`

```

long it.unibo.torsello.bluetoothpositioning.activities.MainActivity.back_pressed [private]

```

6.23.3.2 `DEVICE_FRAGMENT`

```

final String it.unibo.torsello.bluetoothpositioning.activities.MainActivity.DEVICE_FRAGMENT =
    "device" [static], [private]

```

6.23.3.3 `isBackPressed`

```

boolean it.unibo.torsello.bluetoothpositioning.activities.MainActivity.isBackPressed = false
[private]

```

6.23.3.4 REQUEST_CODE_ASK_MULTIPLE_PERMISSIONS

```
final int it.unibo.torsello.bluetoothpositioning.activities.MainActivity.REQUEST_CODE_ASK_MULTIPLE_PERMISSIONS = 124 [private]
```

6.23.3.5 USB_MEASUREMENT_FRAGMENT

```
final String it.unibo.torsello.bluetoothpositioning.activities.MainActivity.USB_MEASUREMENT_FRAGMENT = "usb measurement" [static], [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [MainActivity.java](#)

6.24 Riferimenti per la classe it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter

Diagramma delle classi per it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter

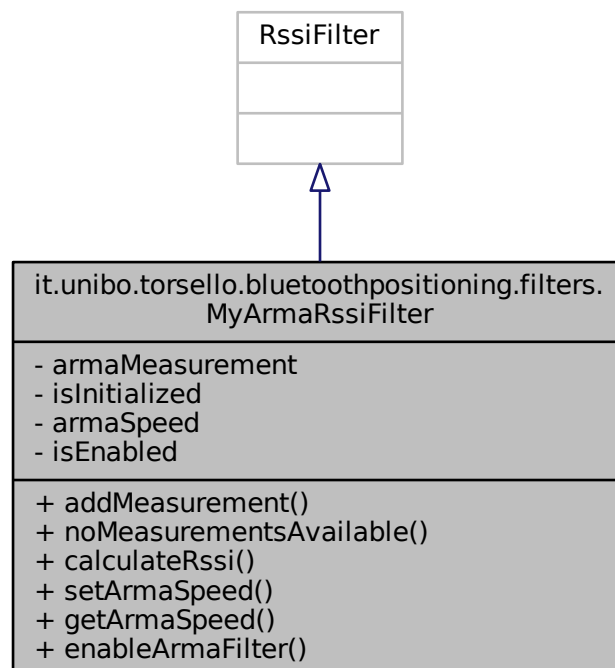
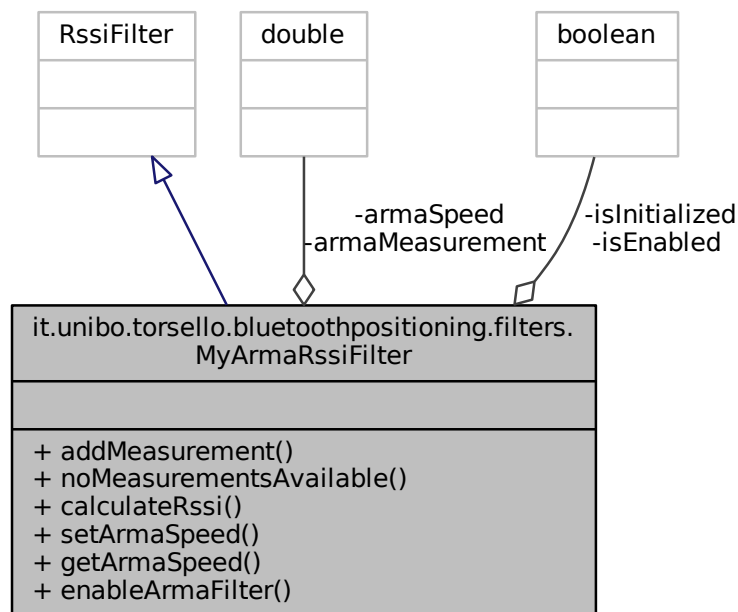


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter`:



Membri pubblici

- void `addMeasurement` (Integer rssi)
- boolean `noMeasurementsAvailable` ()
- double `calculateRssi` ()

Membri pubblici statici

- static void `setArmaSpeed` (double arma_speed)
- static double `getArmaSpeed` ()
- static void `enableArmaFilter` (boolean set)

Attributi privati

- double `armaMeasurement`
- boolean `isInitialized` = false

Attributi privati statici

- static double `armaSpeed` = 0.1D
- static boolean `isEnabled` = true

6.24.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.24.2 Documentazione delle funzioni membro

6.24.2.1 addMeasurement()

```
void it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter.addMeasurement (
    Integer rssi )

30                                     {
31
32     if (isEnabled) {
33         if (!isInitialized) {
34             armaMeasurement = rssi;
35             isInitialized = true;
36         }
37
38         armaMeasurement = (armaMeasurement -
39     armaSpeed * (armaMeasurement - rssi));
40     } else {
41         armaMeasurement = rssi;
42     }
43 }
```

6.24.2.2 calculateRssi()

```
double it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter.calculateRssi ( )

51                                     {
52     return armaMeasurement;
53 }
```

6.24.2.3 enableArmaFilter()

```
static void it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter.enableArmaFilter (
    boolean set ) [static]

25                                     {
26     isEnabled = set;
27 }
```

6.24.2.4 getArmaSpeed()

```
static double it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter.getArmaSpeed ( )
[static]

21                                     {
22     return armaSpeed;
23 }
```

6.24.2.5 `noMeasurementsAvailable()`

```
boolean it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter.noMeasurementsAvailable  
( )
```

```
46                                     {  
47     return false;  
48 }
```

6.24.2.6 `setArmaSpeed()`

```
static void it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter.setArmaSpeed (   
    double arma_speed ) [static]
```

```
17                                     {  
18     armaSpeed = arma_speed;  
19 }
```

6.24.3 Documentazione dei membri dato

6.24.3.1 `armaMeasurement`

```
double it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter.armaMeasurement [private]
```

6.24.3.2 `armaSpeed`

```
double it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter.armaSpeed = 0.1D [static],  
[private]
```

6.24.3.3 `isEnabled`

```
boolean it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter.isEnabled = true [static],  
[private]
```

6.24.3.4 `isInitialized`

```
boolean it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter.isInitialized = false  
[private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [MyArmaRssiFilter.java](#)

6.25 Riferimenti per l'interfaccia `it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingReport`

Diagramma delle classi per `it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingReport`

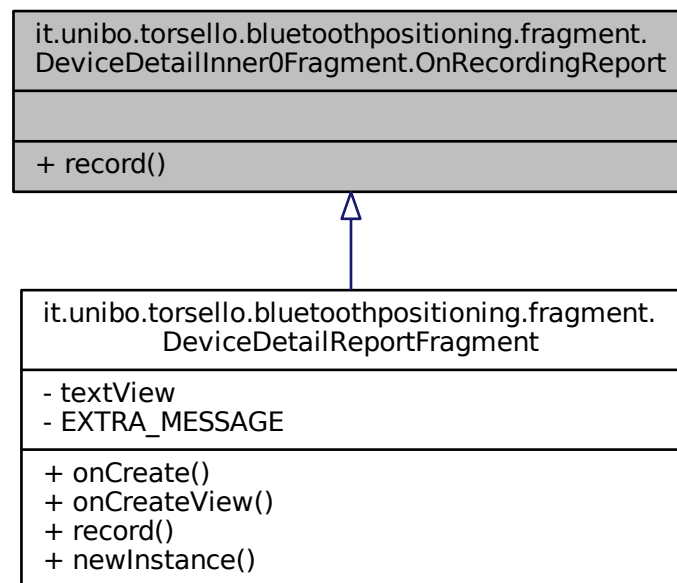
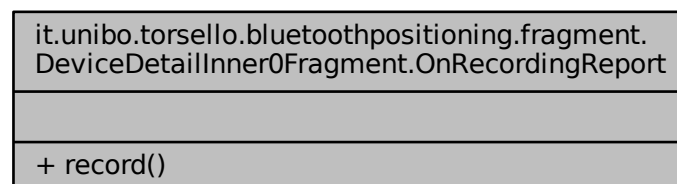


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingReport`:



Membri pubblici

- void `record` (String newRecord)

6.25.1 Documentazione delle funzioni membro

6.25.1.1 record()

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingReport.record (
    String newRecord )
```

Implementato in [it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment](#).

La documentazione per questa interfaccia è stata generata a partire dal seguente file:

- [DeviceDetailInner0Fragment.java](#)

6.26 Riferimenti per l'interfaccia it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingResume

Diagramma delle classi per it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingResume

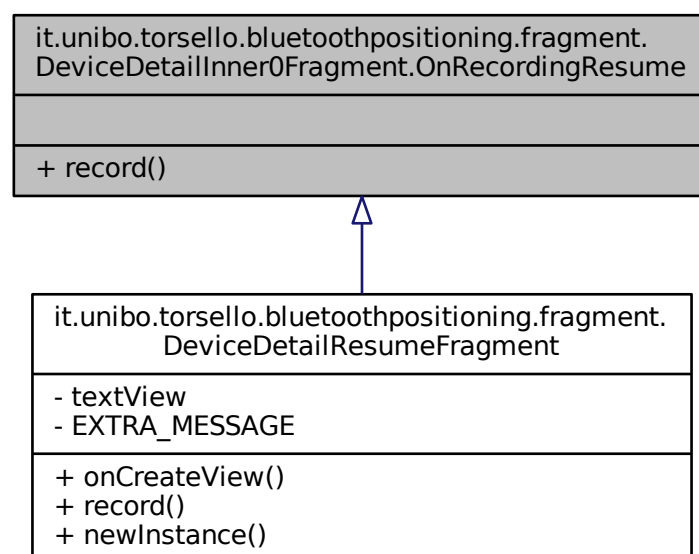
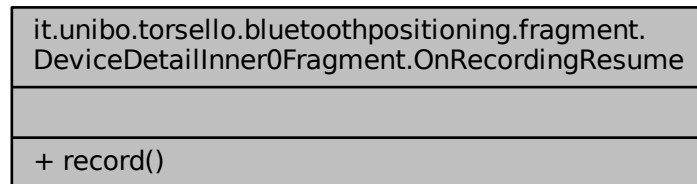


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingResume`:



Membri pubblici

- void `record` (String `newRecord`)

6.26.1 Documentazione delle funzioni membro

6.26.1.1 `record()`

```
void it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingResume.record (
    String newRecord )
```

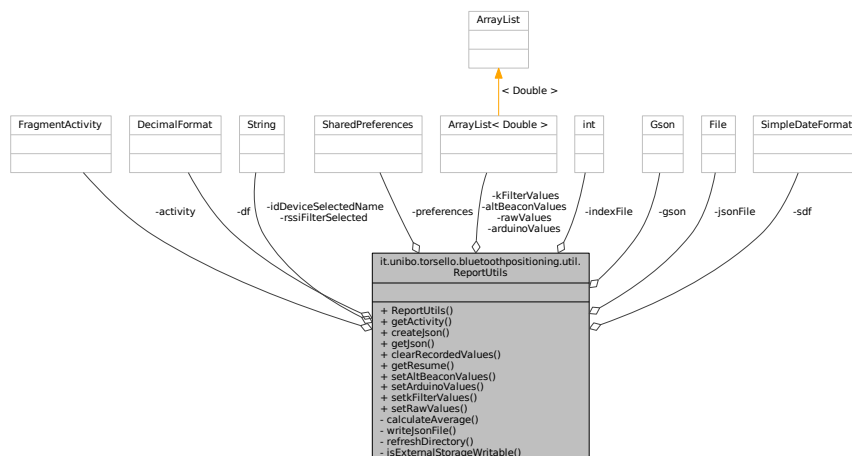
Implementato in `it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment`.

La documentazione per questa interfaccia è stata generata a partire dal seguente file:

- `DeviceDetailInner0Fragment.java`

6.27 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.util.ReportUtils`

Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.util.ReportUtils`:



Membri pubblici

- [ReportUtils](#) (FragmentActivity fragmentActivity, String deviceName)
- FragmentActivity [getActivity](#) ()
- void [createJson](#) ()
- String [getJson](#) ()
- void [clearRecordedValues](#) ()
- String [getResume](#) ()
- void [setAltBeaconValues](#) (Double [altBeaconValues](#))
- void [setArduinoValues](#) (Double [arduinoValues](#))
- void [setkFilterValues](#) (Double [kFilterValues](#))
- void [setRawValues](#) (Double [rawValues](#))

Membri privati

- double [calculateAverage](#) (ArrayList< Double > value)
- void [writeJsonFile](#) ()
- void [refreshDirectory](#) (File file)
- boolean [isExternalStorageWritable](#) ()

Attributi privati

- Gson [gson](#)
- String [idDeviceSelectedName](#)
- int [indexFile](#) = 0
- String [rssiFilterSelected](#)
- ArrayList< Double > [arduinoValues](#)
- ArrayList< Double > [rawValues](#)
- ArrayList< Double > [altBeaconValues](#)
- ArrayList< Double > [kFilterValues](#)
- SimpleDateFormat [sdf](#)
- DecimalFormat [df](#)
- FragmentActivity [activity](#)
- File [jsonFile](#)
- SharedPreferences [preferences](#)

6.27.1 Descrizione dettagliata

Created by federico on 11/10/16.

6.27.2 Documentazione dei costruttori e dei distruttori

6.27.2.1 ReportUtils()

```

it.unibo.torsello.bluetoothpositioning.util.ReportUtils.ReportUtils (
    FragmentActivity fragmentActivity,
    String deviceName )

62                                     {
63     this.activity = fragmentActivity;
64     this.idDeviceSelectedName = deviceName;
65
66     arduinoValues = new ArrayList<>();
67     rawValues = new ArrayList<>();
68     altBeaconValues = new ArrayList<>();
69     kFilterValues = new ArrayList<>();
70
71     sdf = new SimpleDateFormat("dd-MMM-yyyy", Locale.getDefault());
72
73     df = new DecimalFormat("00", DecimalFormatSymbols.getInstance());
74
75     gson = new GsonBuilder().setPrettyPrinting().create();
76
77     preferences = getActivity().
78         getSharedPreferences(SettingConstants.SETTINGS_PREFERENCES, 0);
79
80 }
```

6.27.3 Documentazione delle funzioni membro

6.27.3.1 calculateAverage()

```

double it.unibo.torsello.bluetoothpositioning.util.ReportUtils.calculateAverage (
    ArrayList< Double > value ) [private]

230                                     {
231     Double sum = 0D;
232     if(!value.isEmpty()) {
233         for (Double mark : value) {
234             sum += mark;
235         }
236         return sum / value.size();
237     }
238     return sum;
239 }
```

6.27.3.2 clearRecordedValues()

```

void it.unibo.torsello.bluetoothpositioning.util.ReportUtils.clearRecordedValues ( )

178                                     {
179     arduinoValues.clear();
180     rawValues.clear();
181     altBeaconValues.clear();
182     kFilterValues.clear();
183 }
```

6.27.3.3 `createJson()`

```

void it.unibo.torsello.bluetoothpositioning.util.ReportUtils.createJson ( )

86         {
87
88         String formattedDate = sdf.format(Calendar.getInstance().getTime());
89
90         double processNoise = preferences.getFloat(SettingConstants.KALMAN_NOISE_VALUE, 0);
91
92         String tempFilter = "";
93         if (rssiFilterSelected != null) {
94             tempFilter = rssiFilterSelected;
95         }
96
97         rssiFilterSelected = ((ApplicationActivity)
getActivity()).getRssiFilterSelected();
98
99         if (!rssiFilterSelected.equals(tempFilter)) {
100             indexFile = 0;
101         }
102
103         if (isExternalStorageWritable()) {
104             File root = Environment.getExternalStorageDirectory();
105
106             File dir = new File(root.getAbsolutePath()
107                 + File.separator
108                 + getActivity().getString(R.string.app_name)
109                 + " Report");
110             dir.mkdirs();
111
112             File subDir1 = new File(dir.getAbsolutePath() + File.separator
113                 + formattedDate);
114             subDir1.mkdirs();
115
116             File subDir2 = new File(subDir1.getAbsolutePath() + File.separator
117                 + "KF process noise " + processNoise);
118             subDir2.mkdirs();
119
120             File subDir3 = new File(subDir2.getAbsolutePath() + File.separator
121                 + rssiFilterSelected);
122             subDir3.mkdirs();
123
124             String fileName = String.format(idDeviceSelectedName + " - %s.json",
df.format(indexFile));
125
126             jsonFile = new File(subDir3, fileName);
127
128             if (jsonFile.exists()) {
129                 if (!rssiFilterSelected.equals(tempFilter)) {
130                     indexFile = 0;
131                 } else {
132                     String name = jsonFile.getName();
133                     String substring = name.substring(name.length() - 7, name.length() - 5);
134                     indexFile = Integer.parseInt(substring);
135                     indexFile++;
136                     fileName = String.format(idDeviceSelectedName + " - %s.json",
df.format(indexFile));
137                     jsonFile = new File(subDir3, fileName);
138                 }
139             } else {
140                 indexFile = 0;
141             }
142
143             try {
144                 jsonFile.createNewFile();
145             } catch (IOException e) {
146                 e.printStackTrace();
147             }
148
149             writeJsonFile();
150
151             refreshDirectory(jsonFile);
152
153         }
154     }
155 }

```

6.27.3.4 `getActivity()`

```

FragmentActivity it.unibo.torsello.bluetoothpositioning.util.ReportUtils.getActivity ( )

```



```
221         if (isKalmanFilterEnabled) {
222             sb.append(min).append(kf).append(Collections.min(kFilterValues)).append("\n");
223             sb.append(max).append(kf).append(Collections.max(kFilterValues)).append("\n");
224             sb.append(avg).append(kf).append(calculateAverage(
kFilterValues)).append("\n");
225         }
226
227         return String.valueOf(sb);
228     }
```

6.27.3.7 `isExternalStorageWritable()`

```
boolean it.unibo.torsello.bluetoothpositioning.util.ReportUtils.isExternalStorageWritable ( )
[private]
```

```
326         {
327         String state = Environment.getExternalStorageState();
328         if (Environment.MEDIA_MOUNTED.equals(state)) {
329             return true;
330         }
331         Log.d("sure", "not writeable");
332         return false;
333     }
```

6.27.3.8 `refreshDirectory()`

```
void it.unibo.torsello.bluetoothpositioning.util.ReportUtils.refreshDirectory (
    File file ) [private]
```

```
311         {
312         if (file != null) {
313             Intent mediaScanIntent = new Intent(Intent.ACTION_MEDIA_SCANNER_SCAN_FILE);
314             mediaScanIntent.setData(Uri.fromFile(file));
315             getActivity().sendBroadcast(mediaScanIntent);
316
317             Snackbar.make(getActivity().findViewById(R.id.fab),
318                 "Report saved", Snackbar.LENGTH_SHORT).show();
319         } else {
320             Snackbar.make(getActivity().findViewById(R.id.fab),
321                 "Report retrieval failed", Snackbar.LENGTH_SHORT).show();
322         }
323     }
```

6.27.3.9 `setAltBeaconValues()`

```
void it.unibo.torsello.bluetoothpositioning.util.ReportUtils.setAltBeaconValues (
    Double altBeaconValues )
```

```
335         {
336         this.altBeaconValues.add(altBeaconValues);
337     }
```

6.27.3.10 `setArduinoValues()`

```
void it.unibo.torsello.bluetoothpositioning.util.ReportUtils.setArduinoValues (
    Double arduinoValues )
```

```
339         {
340         this.arduinoValues.add(arduinoValues);
341     }
```


6.27.3.11 setkFilterValues()

```
void it.unibo.torsello.bluetoothpositioning.util.ReportUtils.setkFilterValues (
    Double kFilterValues )
```

```
343                                     {
344         this.kFilterValues.add(kFilterValues);
345     }
```

6.27.3.12 setRawValues()

```
void it.unibo.torsello.bluetoothpositioning.util.ReportUtils.setRawValues (
    Double rawValues )
```

```
347                                     {
348         this.rawValues.add(rawValues);
349     }
```

6.27.3.13 writeJsonFile()

```
void it.unibo.torsello.bluetoothpositioning.util.ReportUtils.writeJsonFile ( ) [private]
```

```
241                                     {
242         String formattedDate = sdf.format(Calendar.getInstance().getTime());
243         SimpleDateFormat sdf2 = new SimpleDateFormat("hh:mm", Locale.getDefault());
244         String time = sdf2.format(Calendar.getInstance().getTime());
245
246         double processNoise = preferences.getFloat(SettingConstants.KALMAN_NOISE_VALUE, 0);
247         boolean isKalmanFilterEnabled = preferences.getBoolean(SettingConstants.
KALMAN_FILTER_ENABLED, false);
248
249         try {
250             Writer writer = new FileWriter(jsonFile);
251
252             JsonWriter jw = gson.newJsonWriter(writer);
253
254             jw.beginObject();
255             {
256                 jw.name("id").value("report " + df.format(indexFile));
257                 jw.name("date").value(formattedDate);
258                 jw.name("time").value(time);
259                 jw.name("filter").value(rssiFilterSelected);
260                 jw.name("distance_estimation");
261                 jw.beginObject();
262                 {
263                     jw.name("arduino");
264                     if (arduinoValues.isEmpty()) {
265                         jw.value("no data");
266                     } else {
267                         jw.beginArray();
268                         for (Double value : arduinoValues) {
269                             jw.value(value);
270                         }
271                         jw.endArray();
272                     }
273
274                     jw.name("raw");
275                     jw.beginArray();
276                     for (Double value : rawValues) {
277                         jw.value(value);
278                     }
279                     jw.endArray();
280
281                     jw.name("altbeacon");
282                     jw.beginArray();
283                     for (Double value : altBeaconValues) {
284                         jw.value(value);
285                     }
286                     jw.endArray();
287
288                     jw.name("kFilter");
289                     if (isKalmanFilterEnabled) {
```

```
290         jw.name("kFilter_processNoise").value(processNoise);
291         jw.beginArray();
292         for (Double value : kFilterValues) {
293             jw.value(value);
294         }
295         jw.endArray();
296     } else {
297         jw.value(getActivity().getString(R.string.kalman_filter_disabled));
298     }
299 }
300 jw.endObject();
301 }
302 jw.endObject();
303
304 writer.close();
305 } catch (IOException e) {
306     e.printStackTrace();
307 }
308
309 }
```

6.27.4 Documentazione dei membri dato

6.27.4.1 activity

`FragmentActivity it.unibo.torsello.bluetoothpositioning.util.ReportUtils.activity` [private]

6.27.4.2 altBeaconValues

`ArrayList<Double> it.unibo.torsello.bluetoothpositioning.util.ReportUtils.altBeaconValues`
[private]

6.27.4.3 arduinoValues

`ArrayList<Double> it.unibo.torsello.bluetoothpositioning.util.ReportUtils.arduinoValues` [private]

6.27.4.4 df

`DecimalFormat it.unibo.torsello.bluetoothpositioning.util.ReportUtils.df` [private]

6.27.4.5 gson

`Gson it.unibo.torsello.bluetoothpositioning.util.ReportUtils.gson` [private]

6.27.4.6 idDeviceSelectedName

`String it.unibo.torsello.bluetoothpositioning.util.ReportUtils.idDeviceSelectedName` [private]

6.27.4.7 indexFile

`int it.unibo.torsello.bluetoothpositioning.util.ReportUtils.indexFile = 0` [private]

6.27.4.8 jsonFile

`File it.unibo.torsello.bluetoothpositioning.util.ReportUtils.jsonFile` [private]

6.27.4.9 kFilterValues

```
ArrayList<Double> it.unibo.torsello.bluetoothpositioning.util.ReportUtils.kFilterValues [private]
```

6.27.4.10 preferences

```
SharedPreferences it.unibo.torsello.bluetoothpositioning.util.ReportUtils.preferences [private]
```

6.27.4.11 rawValues

```
ArrayList<Double> it.unibo.torsello.bluetoothpositioning.util.ReportUtils.rawValues [private]
```

6.27.4.12 rssiFilterSelected

```
String it.unibo.torsello.bluetoothpositioning.util.ReportUtils.rssiFilterSelected [private]
```

6.27.4.13 sdf

```
SimpleDateFormat it.unibo.torsello.bluetoothpositioning.util.ReportUtils.sdf [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [ReportUtils.java](#)

6.28 Riferimenti per la classe it.unibo.torsello.bluetoothpositioning.task.SaveImageTask

Diagramma delle classi per it.unibo.torsello.bluetoothpositioning.task.SaveImageTask

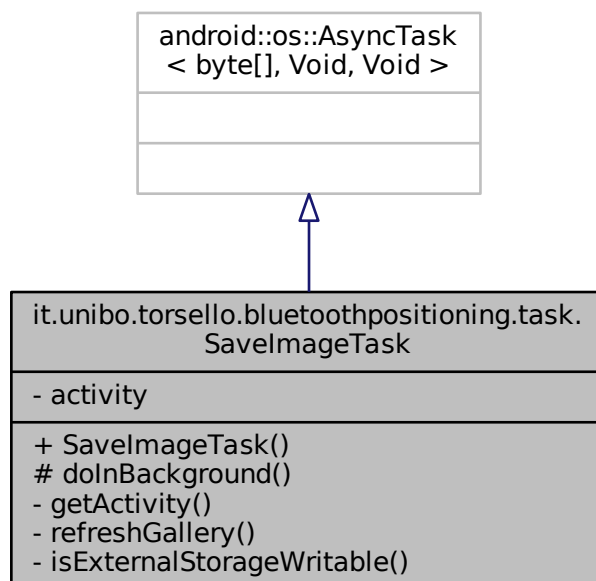
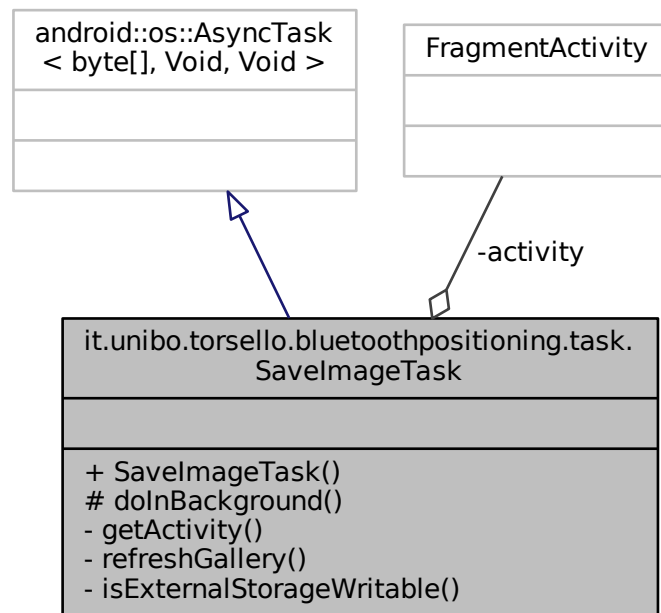


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.task.SaveImageTask`:



Membri pubblici

- [SaveImageTask](#) (`FragmentActivity fragmentActivity`)

Membri protetti

- Void [doInBackground](#) (`byte[]... data`)

Membri privati

- `FragmentActivity` [getActivity](#) ()
- void [refreshGallery](#) (`File file`)
- boolean [isExternalStorageWritable](#) ()

Attributi privati

- `FragmentActivity` [activity](#)

6.28.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.28.2 Documentazione dei costruttori e dei distruttori

6.28.2.1 SaveImageTask()

```
it.unibo.torsello.bluetoothpositioning.task.SaveImageTask.SaveImageTask (
    FragmentActivity fragmentActivity )
```

```
26                                     {
27     this.activity = fragmentActivity;
28 }
```

6.28.3 Documentazione delle funzioni membro

6.28.3.1 doInBackground()

```
Void it.unibo.torsello.bluetoothpositioning.task.SaveImageTask.doInBackground (
    byte... [] data ) [protected]
```

```
35                                     {
36
37     // Write to disk
38     if (isExternalStorageWritable()) {
39         File root = Environment.getExternalStorageDirectory();
40         File dir = new File(root.getAbsolutePath() + File.separator
41             + getActivity().getString(R.string.app_name));
42         dir.mkdir();
43
44         String fileName = String.format(Locale.getDefault(), "%d.jpg", System.currentTimeMillis());
45         File outFile = new File(dir, fileName);
46         try {
47
48             FileOutputStream outputStream = new FileOutputStream(outFile);
49             outputStream.write(data[0]);
50             outputStream.flush();
51             outputStream.close();
52
53             refreshGallery(outFile);
54         } catch (IOException e) {
55             e.printStackTrace();
56         }
57     }
58     return null;
59 }
```

6.28.3.2 getActivity()

```
FragmentActivity it.unibo.torsello.bluetoothpositioning.task.SaveImageTask.getActivity ( )
[private]
```

```
30                                     {
31     return activity;
32 }
```

6.28.3.3 isExternalStorageWritable()

```
boolean it.unibo.torsello.bluetoothpositioning.task.SaveImageTask.isExternalStorageWritable (
) [private]
```

```
76                                     {
77     String state = Environment.getExternalStorageState();
78     if (Environment.MEDIA_MOUNTED.equals(state)) {
79         return true;
80     }
81     Log.d("sure", "not writeable");
82     return false;
83 }
```

6.28.3.4 `refreshGallery()`

```

void it.unibo.torsello.bluetoothpositioning.task.SaveImageTask.refreshGallery (
    File file ) [private]

61
62         {
63             if (file != null) {
64                 Intent mediaScanIntent = new Intent(Intent.ACTION_MEDIA_SCANNER_SCAN_FILE);
65                 mediaScanIntent.setData(Uri.fromFile(file));
66                 getActivity().sendBroadcast(mediaScanIntent);
67                 Snackbar.make(getActivity().findViewById(R.id.fab),
68                     "Your picture has been saved", Snackbar.LENGTH_SHORT).show();
69             } else {
70                 Snackbar.make(getActivity().findViewById(R.id.fab),
71                     "Image retrieval failed", Snackbar.LENGTH_SHORT).show();
72             }
73         }

```

6.28.4 Documentazione dei membri dato

6.28.4.1 `activity`

```

FragmentActivity it.unibo.torsello.bluetoothpositioning.task.SaveImageTask.activity [private]

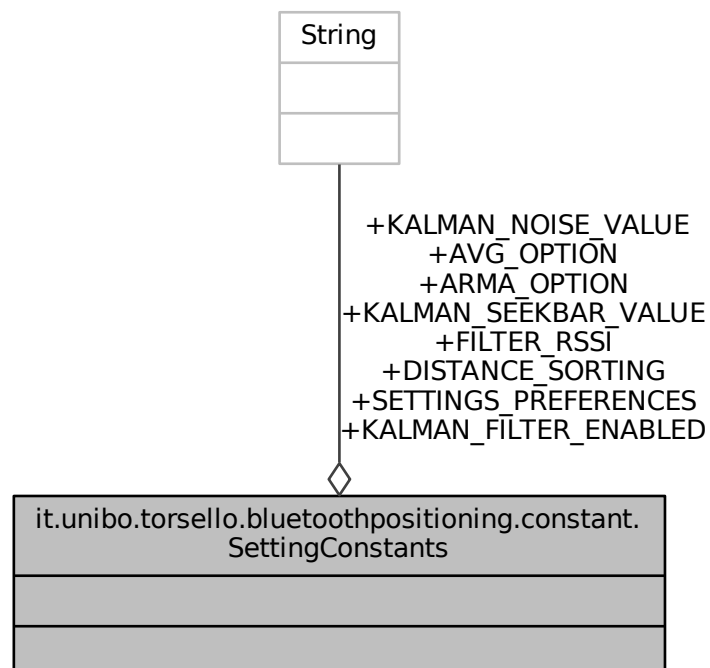
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [SaveImageTask.java](#)

6.29 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.constant.SettingConstants`

Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.constant.SettingConstants`:



Attributi pubblici statici

- static final String [SETTINGS_PREFERENCES](#) = "settings_preferences"
- static final String [FILTER_RSSI](#) = "filter_rssi"
- static final String [ARMA_OPTION](#) = "arma_option"
- static final String [AVG_OPTION](#) = "avg_option"
- static final String [KALMAN_SEEKBAR_VALUE](#) = "kalman_filter_seek_value"
- static final String [KALMAN_NOISE_VALUE](#) = "kalman_filter_noise_value"
- static final String [KALMAN_FILTER_ENABLED](#) = "kalma_filtrer_enabled"
- static final String [DISTANCE_SORTING](#) = "distance_sorting_selected"

6.29.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

A class containing constants for the SharedPreferences objects.

6.29.2 Documentazione dei membri dato

6.29.2.1 ARMA_OPTION

```
final String it.unibo.torsello.bluetoothpositioning.constant.SettingConstants.ARMA_OPTION =  
"arma_option" [static]
```

6.29.2.2 AVG_OPTION

```
final String it.unibo.torsello.bluetoothpositioning.constant.SettingConstants.AVG_OPTION =  
"avg_option" [static]
```

6.29.2.3 DISTANCE_SORTING

```
final String it.unibo.torsello.bluetoothpositioning.constant.SettingConstants.DISTANCE_SORTING  
= "distance_sorting_selected" [static]
```

6.29.2.4 FILTER_RSSI

```
final String it.unibo.torsello.bluetoothpositioning.constant.SettingConstants.FILTER_RSSI =  
"filter_rssi" [static]
```

6.29.2.5 KALMAN_FILTER_ENABLED

```
final String it.unibo.torsello.bluetoothpositioning.constant.SettingConstants.KALMAN_FILTER_↔  
ENABLED = "kalma_filtrer_enabled" [static]
```

6.29.2.6 KALMAN_NOISE_VALUE

```
final String it.unibo.torsello.bluetoothpositioning.constant.SettingConstants.KALMAN_NOISE_V↔  
ALUE = "kalman_filter_noise_value" [static]
```

6.29.2.7 KALMAN_SEEKBAR_VALUE

```
final String it.unibo.torsello.bluetoothpositioning.constant.SettingConstants.KALMAN_SEEKBAR←  
_VALUE = "kalman_filter_seek_value" [static]
```

6.29.2.8 SETTINGS_PREFERENCES

```
final String it.unibo.torsello.bluetoothpositioning.constant.SettingConstants.SETTINGS_PREFE←  
RENCES = "settings_preferences" [static]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [SettingConstants.java](#)

6.30 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment`

Diagramma delle classi per `it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment`

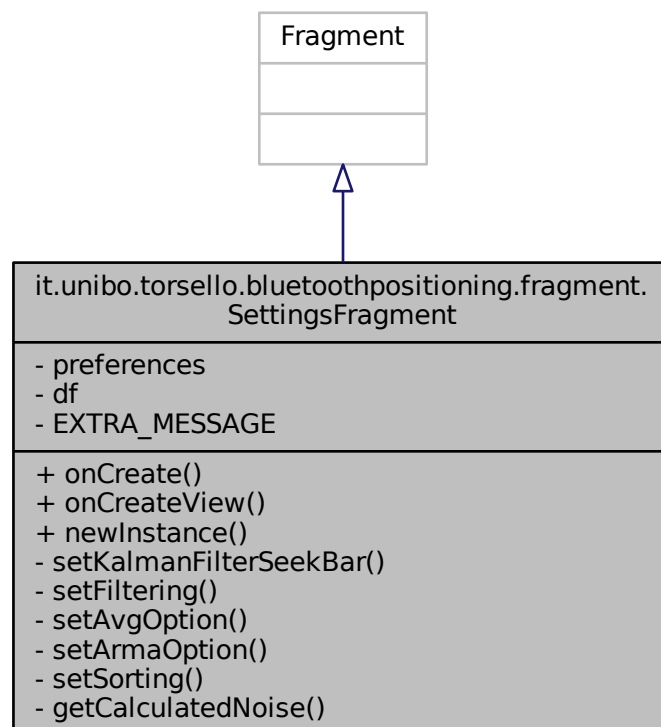
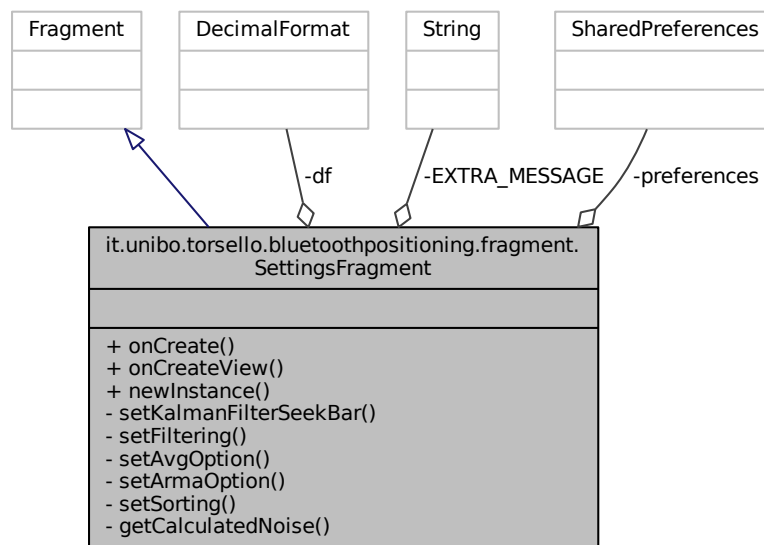


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment`:



Membri pubblici

- void `onCreate` (Bundle savedInstanceState)
- View `onCreateView` (LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState)

Membri pubblici statici

- static `SettingsFragment newInstance` ()

Membri privati

- void `setKalmanFilterSeekBar` (View root)
- void `setFiltering` (View root)
- void `setAvgOption` (View root)
- void `setArmaOption` (View root)
- void `setSorting` (View root)

Membri privati statici

- static float `getCalculatedNoise` (int p)

Attributi privati

- SharedPreferences `preferences`
- DecimalFormat `df`

Attributi privati statici

- static final String `EXTRA_MESSAGE` = "EXTRA_MESSAGE"

6.30.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.30.2 Documentazione delle funzioni membro

6.30.2.1 `getCalculatedNoise()`

```
static float it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment.getCalculatedNoise (
    int p ) [static], [private]

99
100     double percent = (p / 10D);
101     double noise = KFilterConstants.KALMAN_NOISE_MIN +
102         (KFilterConstants.KALMAN_NOISE_MAX - KFilterConstants.KALMAN_NOISE_MIN) * percent;
103
104     return (float) noise;
105
106 }
```

6.30.2.2 `newInstance()`

```
static SettingsFragment it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment.newInstance ( ) [static]

29
30     SettingsFragment fragment = new SettingsFragment();
31     Bundle args = new Bundle();
32     args.putString(EXTRA_MESSAGE, "Settings");
33     fragment.setArguments(args);
34     return fragment;
35 }
```

6.30.2.3 `onCreate()`

```
void it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment.onCreate (
    Bundle savedInstanceState )

38
39     super.onCreate(savedInstanceState);
40
41     preferences = getActivity().getSharedPreferences(SettingConstants.SETTINGS_PREFERENCES,
42         0);
43     df = new DecimalFormat("0.0#");
```

6.30.2.4 onCreateView()

```
View it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment.onCreateView (
    LayoutInflater inflater,
    ViewGroup container,
    Bundle savedInstanceState )

46
47     View root = inflater.inflate(R.layout.fragment_settings, container, false);
48
49     setKalmanFilterSeekBar(root);
50
51     setFiltering(root);
52
53     setArmaOption(root);
54
55     setAvgOption(root);
56
57     setSorting(root);
58
59     return root;
60 }
```

6.30.2.5 setArmaOption()

```
void it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment.setArmaOption (
    View root ) [private]

146
147     RadioGroup rg = (RadioGroup) root.findViewById(R.id.radioGroupArmaOptions);
148     int checkedRadioButton;
149     if (rg.getCheckedRadioButtonId() != 0) {
150         checkedRadioButton = preferences.getInt(SettingConstants.ARMA_OPTION, rg.
getCheckedRadioButtonId());
151     } else {
152         checkedRadioButton = 0;
153     }
154     rg.check(checkedRadioButton);
155     rg.setOnCheckedChangeListener(new RadioGroup.OnCheckedChangeListener() {
156         @Override
157         public void onCheckedChanged(RadioGroup group, int checkedId) {
158             SharedPreferences.Editor editor = preferences.edit();
159             editor.putInt(SettingConstants.ARMA_OPTION, checkedId);
160             editor.apply();
161         }
162     });
163 }
```

6.30.2.6 setAvgOption()

```
void it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment.setAvgOption (
    View root ) [private]

127
128     RadioGroup rg = (RadioGroup) root.findViewById(R.id.radioGroupAverageOptions);
129     int checkedRadioButton;
130     if (rg.getCheckedRadioButtonId() != 0) {
131         checkedRadioButton = preferences.getInt(SettingConstants.AVG_OPTION, rg.
getCheckedRadioButtonId());
132     } else {
133         checkedRadioButton = 0;
134     }
135     rg.check(checkedRadioButton);
136     rg.setOnCheckedChangeListener(new RadioGroup.OnCheckedChangeListener() {
137         @Override
138         public void onCheckedChanged(RadioGroup group, int checkedId) {
139             SharedPreferences.Editor editor = preferences.edit();
140             editor.putInt(SettingConstants.AVG_OPTION, checkedId);
141             editor.apply();
142         }
143     });
144 }
```

6.30.2.7 setFiltering()

```

void it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment.setFiltering (
    View root ) [private]

108      {
109      RadioGroup rg = (RadioGroup) root.findViewById(R.id.radioGroupFilter);
110      int checkedRadioButton;
111      if (rg.getCheckedRadioButtonId() != 0) {
112          checkedRadioButton = preferences.getInt(SettingConstants.FILTER_RSSI, rg.
getCheckedRadioButtonId());
113      } else {
114          checkedRadioButton = 0;
115      }
116      rg.check(checkedRadioButton);
117      rg.setOnCheckedChangeListener(new RadioGroup.OnCheckedChangeListener() {
118          @Override
119          public void onCheckedChanged(RadioGroup group, int checkedId) {
120              SharedPreferences.Editor editor = preferences.edit();
121              editor.putInt(SettingConstants.FILTER_RSSI, checkedId);
122              editor.apply();
123          }
124      });
125      }

```

6.30.2.8 setKalmanFilterSeekBar()

```

void it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment.setKalmanFilterSeekBar (
    View root ) [private]

63      {
64      SeekBar kalmanSeek = (SeekBar) root.findViewById(R.id.kalmanSeek);
65      int seekValue = preferences.getInt(SettingConstants.KALMAN_SEEKBAR_VALUE, 1);
66      kalmanSeek.setProgress(seekValue);
67
68      final TextView kalmanFilterValue = (TextView) root.findViewById(R.id.kalmanValue);
69      kalmanFilterValue.setText(df.format(getCalculatedNoise(seekValue)));
70
71      kalmanSeek.setOnSeekBarChangeListener(new SeekBar.OnSeekBarChangeListener() {
72          @Override
73          public void onProgressChanged(SeekBar seekBar, int seekValue, boolean fromUser) {
74              //      kalmanFilterValue.setText(df.format(getCalculatedNoise(seekValue)));
75          }
76
77          @Override
78          public void onStartTrackingTouch(SeekBar seekBar) {
79          }
80
81          @Override
82          public void onStopTrackingTouch(SeekBar seekBar) {
83              SharedPreferences.Editor editor = preferences.edit();
84              int progress = seekBar.getProgress();
85
86              if (!(progress>0)) {
87                  editor.putBoolean(SettingConstants.KALMAN_FILTER_ENABLED, false);
88              }
89
90              float storeProgress = getCalculatedNoise(progress);
91              editor.putInt(SettingConstants.KALMAN_SEEKBAR_VALUE, progress);
92              editor.putFloat(SettingConstants.KALMAN_NOISE_VALUE, storeProgress );
93              editor.apply();
94              kalmanFilterValue.setText(df.format(storeProgress));
95          }
96      });
97      }

```

6.30.2.9 setSorting()

```

void it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment.setSorting (
    View root ) [private]

```

```

165         {
166         RadioGroup rg = (RadioGroup) root.findViewById(R.id.radioGroupSortingMode);
167         int checkedRadioButton;
168         if (rg.getCheckedRadioButtonId() != 0) {
169             checkedRadioButton = preferences.getInt(SettingConstants.DISTANCE_SORTING, rg.
getCheckedRadioButtonId());
170         } else {
171             checkedRadioButton = 0;
172         }
173         rg.check(checkedRadioButton);
174         rg.setOnCheckedChangeListener(new RadioGroup.OnCheckedChangeListener() {
175             @Override
176             public void onCheckedChanged(RadioGroup group, int checkedId) {
177                 SharedPreferences.Editor editor = preferences.edit();
178                 editor.putInt(SettingConstants.DISTANCE_SORTING, checkedId);
179                 editor.apply();
180             }
181         });
182     }

```

6.30.3 Documentazione dei membri dato

6.30.3.1 df

DecimalFormat it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment.df [private]

6.30.3.2 EXTRA_MESSAGE

final String it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment.EXTRA_MESSAGE =
"EXTRA_MESSAGE" [static], [private]

6.30.3.3 preferences

SharedPreferences it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment.preferences
[private]

La documentazione per questa classe è stata generata a partire dal seguente file:

- [SettingsFragment.java](#)

6.31 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.adapter.StatePagerAdapter`

Diagramma delle classi per `it.unibo.torsello.bluetoothpositioning.adapter.StatePagerAdapter`

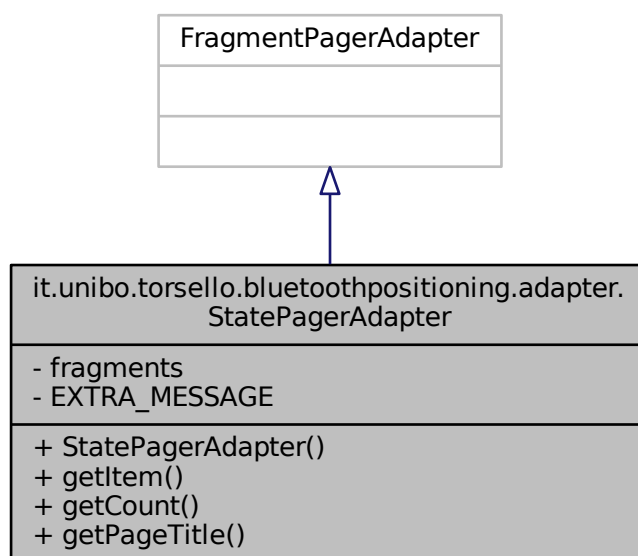
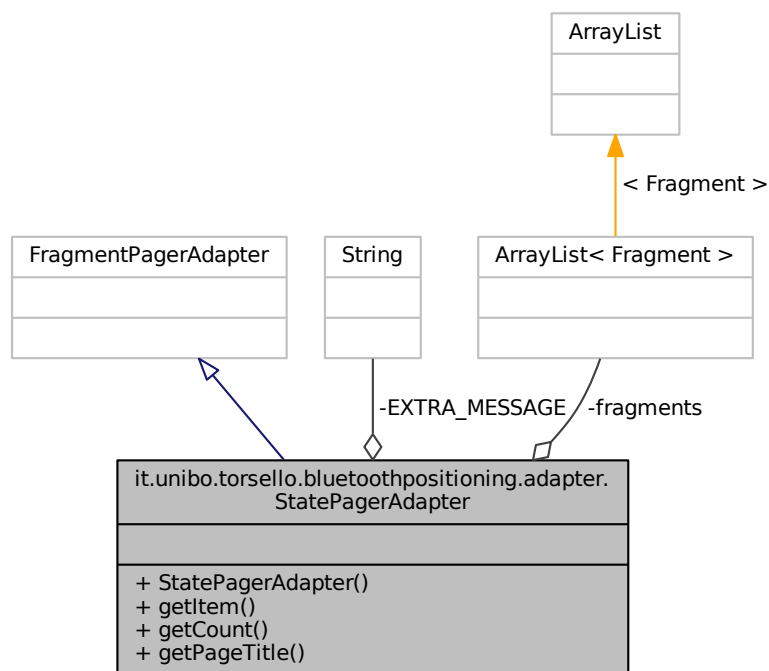


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.adapter.StatePagerAdapter`:



Membri pubblici

- `StatePagerAdapter` (`FragmentManager fm`, `ArrayList< Fragment > fragments`)
- `Fragment getItem` (`int position`)
- `int getCount` ()
- `CharSequence getPageTitle` (`int position`)

Attributi privati

- `ArrayList< Fragment > fragments`

Attributi privati statici

- `static final String EXTRA_MESSAGE = "EXTRA_MESSAGE"`

6.31.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.31.2 Documentazione dei costruttori e dei distruttori

6.31.2.1 `StatePagerAdapter()`

```
it.unibo.torsello.bluetoothpositioning.adapter.StatePagerAdapter.StatePagerAdapter (
    FragmentManager fm,
    ArrayList< Fragment > fragments )
```

```
21
22         super(fm);
23         this.fragments = fragments;
24     }
```

6.31.3 Documentazione delle funzioni membro

6.31.3.1 `getCount()`

```
int it.unibo.torsello.bluetoothpositioning.adapter.StatePagerAdapter.getCount ( )
```

```
32
33         {
34         return this.fragments.size();
35     }
```

6.31.3.2 `getItem()`

```
Fragment it.unibo.torsello.bluetoothpositioning.adapter.StatePagerAdapter.getItem (
    int position )
```

```
27
28         {
29         return this.fragments.get(position);
30     }
```

6.31.3.3 `getPageTitle()`

```
CharSequence it.unibo.torsello.bluetoothpositioning.adapter.StatePagerAdapter.getPageTitle (
    int position )
```

```
37
38         {
39         return fragments.get(position).getArguments().getString(
    EXTRA_MESSAGE);
40     }
```

6.31.4 Documentazione dei membri dato

6.31.4.1 `EXTRA_MESSAGE`

```
final String it.unibo.torsello.bluetoothpositioning.adapter.StatePagerAdapter.EXTRA_MESSAGE =
    "EXTRA_MESSAGE" [static], [private]
```


6.31.4.2 fragments

```
ArrayList<Fragment> it.unibo.torsello.bluetoothpositioning.adapter.StatePagerAdapter.fragments  
[private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [StatePagerAdapter.java](#)

6.32 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment`

Diagramma delle classi per `it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment`

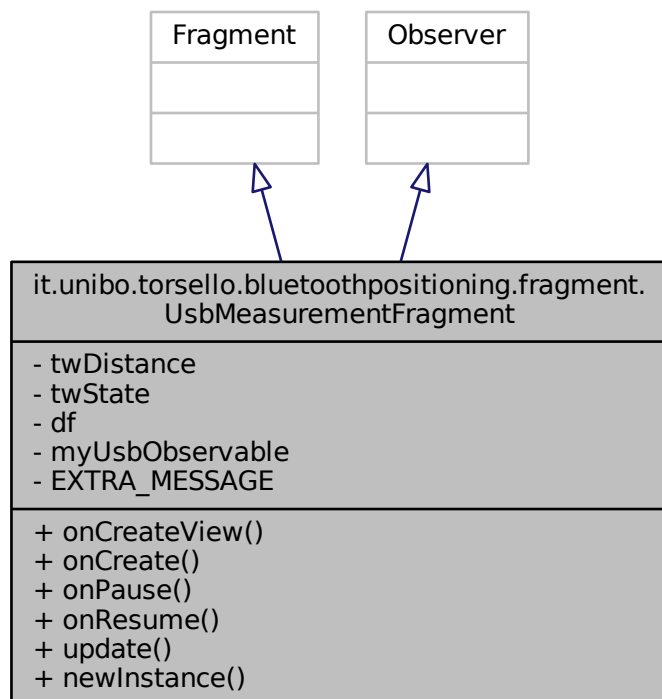
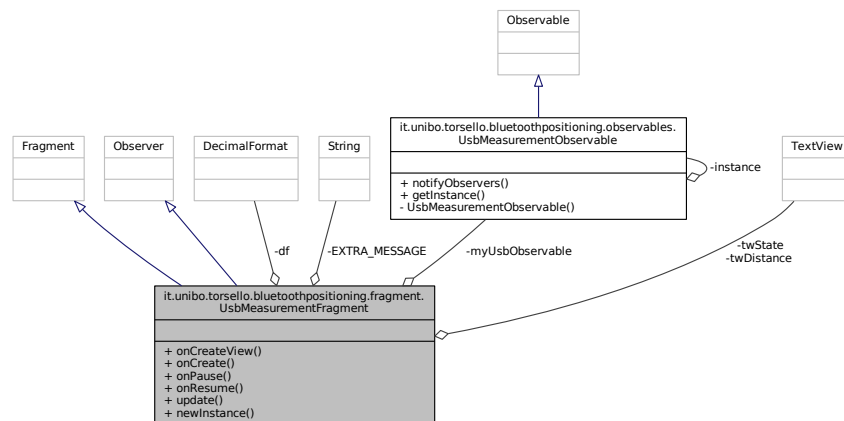


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment`:



Membri pubblici

- View `onCreateView` (LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState)
- void `onCreate` (@Nullable Bundle savedInstanceState)
- void `onPause` ()
- void `onResume` ()
- void `update` (Observable o, final Object arg)

Membri pubblici statici

- static `UsbMeasurementFragment newInstance` ()

Attributi privati

- TextView `twDistance`
- TextView `twState`
- DecimalFormat `df`
- `UsbMeasurementObservable myUsbObservable`

Attributi privati statici

- static final String `EXTRA_MESSAGE` = "EXTRA_MESSAGE"

6.32.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.32.2 Documentazione delle funzioni membro

6.32.2.1 newInstance()

```
static UsbMeasurementFragment it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurement←
Fragment.newInstance ( ) [static]
```

```
35
36         UsbMeasurementFragment fragment = new UsbMeasurementFragment();
37         Bundle args = new Bundle();
38         args.putString(EXTRA_MESSAGE, "Measurement");
39         fragment.setArguments(args);
40         return fragment;
41     }
```

6.32.2.2 onCreate()

```
void it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment.onCreate (
    @Nullable Bundle savedInstanceState )
```

```
55
56         super.onCreate(savedInstanceState);
57
58         myUsbObservable = UsbMeasurementObservable.getInstance();
59         df = new DecimalFormat ("0.00", DecimalFormatSymbols.getInstance());
60
61     }
```

6.32.2.3 onCreateView()

```
View it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment.onCreateView (
    LayoutInflater inflater,
    ViewGroup container,
    Bundle savedInstanceState )
```

```
45
46         View root = inflater.inflate(R.layout.fragment_usb_measurement, container, false);
47
48         twDistance = (TextView) root.findViewById(R.id.tw_distance_value);
49         twState = (TextView) root.findViewById(R.id.tw_state_value);
50
51         return root;
52     }
```

6.32.2.4 onPause()

```
void it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment.onPause ( )
```

```
64
65         myUsbObservable.deleteObserver(this);
66         super.onPause();
67     }
```

6.32.2.5 onResume()

```
void it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment.onResume ( )
```

```
70
71         super.onResume();
72         myUsbObservable.addObserver(this);
73     }
```

6.32.2.6 `update()`

```
void it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment.update (
    Observable o,
    final Object arg )
```

```
76                                     {
77
78         getActivity().runOnUiThread(new Runnable() {
79             @Override
80             public void run() {
81                 if (arg instanceof Double) {
82                     Double arduinoDistance = (Double) arg;
83                     twDistance.setText(String.format("%s m", df.format(arduinoDistance)));
84                 } else if (arg instanceof String) {
85                     String message = (String) arg;
86                     twState.setText(message);
87                 } else if (arg instanceof Boolean) {
88                     boolean state = (Boolean) arg;
89                     if (state) {
90                         twState.setTextColor(Color.GREEN);
91                     } else {
92                         twState.setTextColor(Color.RED);
93                     }
94                 }
95             }
96         });
97     }
```

6.32.3 Documentazione dei membri dato

6.32.3.1 `df`

```
DecimalFormat it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment.df [private]
```

6.32.3.2 `EXTRA_MESSAGE`

```
final String it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment.EXTRA_MESSAGE = "EXTRA_MESSAGE" [static], [private]
```

6.32.3.3 `myUsbObservable`

```
UsbMeasurementObservable it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment.myUsbObservable [private]
```

6.32.3.4 `twDistance`

```
TextView it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment.twDistance [private]
```

6.32.3.5 `twState`

```
TextView it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment.twState [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [UsbMeasurementFragment.java](#)

6.33 Riferimenti per la classe `it.unibo.torsello.bluetoothpositioning.observables.UsbMeasurementObservable`

Diagramma delle classi per `it.unibo.torsello.bluetoothpositioning.observables.UsbMeasurementObservable`

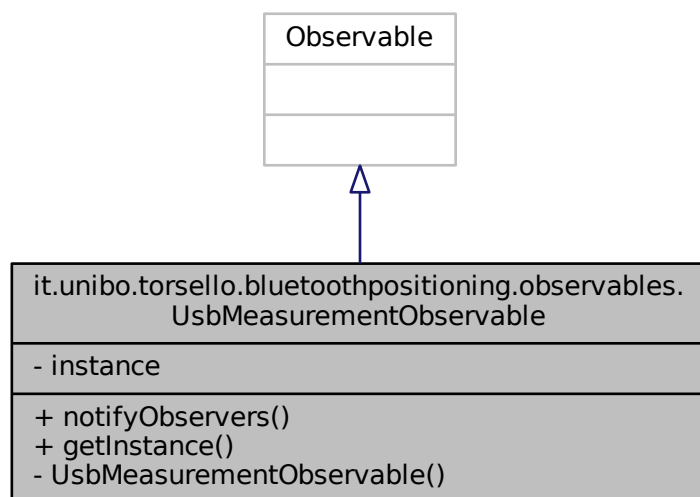
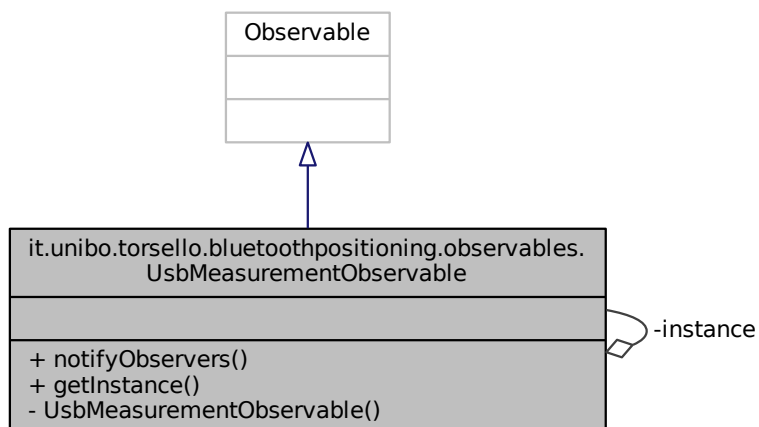


Diagramma di collaborazione per `it.unibo.torsello.bluetoothpositioning.observables.UsbMeasurementObservable`:



Membri pubblici

- void `notifyObservers` (Object data)

Membri pubblici statici

- static [UsbMeasurementObservable](#) `getInstance` ()

Membri privati

- [UsbMeasurementObservable](#) ()

Attributi privati statici

- static [UsbMeasurementObservable](#) `instance` = new [UsbMeasurementObservable](#)()

6.33.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.33.2 Documentazione dei costruttori e dei distruttori**6.33.2.1 UsbMeasurementObservable()**

```
it.unibo.torsello.bluetoothpositioning.observables.UsbMeasurementObservable.UsbMeasurementObservable ( ) [private]
```

```
13                                     {
14         super ();
15     }
16 }
```

6.33.3 Documentazione delle funzioni membro**6.33.3.1 getInstance()**

```
static UsbMeasurementObservable it.unibo.torsello.bluetoothpositioning.observables.UsbMeasurementObservable.getInstance ( ) [static]
```

```
18                                     {
19         return instance;
20     }
```

6.33.3.2 notifyObservers()

```
void it.unibo.torsello.bluetoothpositioning.observables.UsbMeasurementObservable.notifyObservers (
    Object data )
```

```
23                                     {
24         setChanged ();
25         super.notifyObservers (data);
26     }
```


Attributi privati statici

- static final int `BOUND_RATE` = 115200

6.34.1 Descrizione dettagliata

Created by Federico Torsello. federico.torsello@studio.unibo.it

6.34.2 Documentazione dei costruttori e dei distruttori

6.34.2.1 `UsbUtil()`

```
it.unibo.torsello.bluetoothpositioning.util.UsbUtil.UsbUtil (
    ApplicationActivity applicationActivity )
```

```
40                                     {
41     this.applicationActivity = applicationActivity;
42     myUsbObservable = UsbMeasurementObservable.getInstance();
43 }
```

6.34.3 Documentazione delle funzioni membro

6.34.3.1 `closePort()`

```
void it.unibo.torsello.bluetoothpositioning.util.UsbUtil.closePort ( ) [private]
```

```
117                                     {
118     if (port != null) {
119         try {
120             port.close();
121         } catch (IOException e) {
122             // Ignore.
123         }
124         port = null;
125     }
126 }
```

6.34.3.2 `getActivity()`

```
ApplicationActivity it.unibo.torsello.bluetoothpositioning.util.UsbUtil.getActivity ( ) [private]
```

```
45                                     {
46     return applicationActivity;
47 }
```


6.34.3.3 initializeUsb()

```

void it.unibo.torsello.bluetoothpositioning.util.UsbUtil.initializeUsb ( ) [private]

59         {
60
61         // Find all available drivers from attached devices.
62         UsbManager usbManager = (UsbManager) getActivity().getSystemService(Context.USB_SERVICE)
        ;
63         List<UsbSerialDriver> availableDrivers = UsbSerialProber.getDefaultProber().findAllDrivers(
usbManager);
64         if (!availableDrivers.isEmpty()) {
65
66         // Open a connection to the first available driver.
67         UsbSerialDriver driver = availableDrivers.get(0);
68
69         if (usbManager.hasPermission(driver.getDevice())) {
70             if (usbManager.openDevice(driver.getDevice()) != null) {
71                 // Read some data! Most have just one port (port 0).
72                 port = driver.getPorts().get(0);
73             }
74         } else {
75             Intent startIntent = new Intent(getActivity(), getClass());
76             PendingIntent pendingIntent =
77                 PendingIntent.getService(getActivity(), 0, startIntent, 0);
78             usbManager.requestPermission(driver.getDevice(), pendingIntent);
79
80             PendingIntent mPendingIntent = PendingIntent.getBroadcast(getActivity(), 0, new
Intent("intent"), 0);
81             usbManager.requestPermission(driver.getDevice(), mPendingIntent);
82         }
83
84         if (port != null) {
85
86             UsbDeviceConnection connection = usbManager.openDevice(port.getDriver().getDevice());
87
88             if (connection != null) {
89                 try {
90                     port.open(connection);
91                     port.setParameters(BOUND_RATE, UsbSerialPort.DATABITS_8,
UsbSerialPort.STOPBITS_1, UsbSerialPort.PARITY_NONE);
92
93                     String details = "CD - Carrier Detect" + port.getCD() + '\n' +
94                         "CTS - Clear To Send" + port.getCTS() + '\n' +
95                         "DSR - Data Set Ready" + port.getDSR() + '\n' +
96                         "DTR - Data Terminal Ready" + port.getDTR() + '\n' +
97                         "DSR - Data Set Ready" + port.getDSR() + '\n' +
98                         "RI - Ring Indicator" + port.getRI() + '\n' +
99                         "RTS - Request To Send" + port.getRTS();
100
101                 } catch (IOException e) {
102                     myUsbObservable.notifyObservers(
103                         getActivity().getString(R.string.error_opening_device)
+ " " + e.getMessage());
104                     myUsbObservable.notifyObservers(false);
105                     closePort();
106                     return;
107                 }
108             }
109
110             stopIoManager();
111             startIoManager();
112         }
113     }
114 }
115 }

```

6.34.3.4 onPause()

```

void it.unibo.torsello.bluetoothpositioning.util.UsbUtil.onPause ( )

49         {
50             stopIoManager();
51             closePort();
52         }

```

6.34.3.5 `onResume()`

```
void it.unibo.torsello.bluetoothpositioning.util.UsbUtil.onResume ( )
```

```
54         {
55             initializeUsb();
56         }
```

6.34.3.6 `startIoManager()`

```
void it.unibo.torsello.bluetoothpositioning.util.UsbUtil.startIoManager ( ) [private]
```

```
135         {
136             if (port != null) {
137                 SerialInputOutputManager.Listener mListener =
138                     new SerialInputOutputManager.Listener() {
139                         @Override
140                         public void onRunError(Exception e) {
141                             myUsbObservable.notifyObservers(false);
142                             myUsbObservable.notifyObservers(
143                                 getActivity().getString(R.string.usb_device_not_connected));
144                             myUsbObservable.notifyObservers(0D);
145                         }
146                     }
147                 @Override
148                 public void onNewData(final byte[] data) {
149                     try {
150                         myUsbObservable.notifyObservers(true);
151                         myUsbObservable.notifyObservers(
152                             getActivity().getString(R.string.usb_device_connected));
153                         String value = new String(data, "UTF-8").trim();
154                         double distanceEstimate = Double.valueOf(value) / 100;
155                         myUsbObservable.notifyObservers(
156                             distanceEstimate);
157                     } catch (NumberFormatException | UnsupportedEncodingException nfe) {
158                         nfe.printStackTrace();
159                     }
160                 };
161                 mSerialIoManager = new SerialInputOutputManager(port, mListener);
162                 mExecutor.submit(mSerialIoManager);
163             }
164         }
165     }
```

6.34.3.7 `stopIoManager()`

```
void it.unibo.torsello.bluetoothpositioning.util.UsbUtil.stopIoManager ( ) [private]
```

```
128         {
129             if (mSerialIoManager != null) {
130                 mSerialIoManager.stop();
131                 mSerialIoManager = null;
132             }
133         }
```

6.34.4 Documentazione dei membri dato

6.34.4.1 `applicationActivity`

```
ApplicationActivity it.unibo.torsello.bluetoothpositioning.util.UsbUtil.applicationActivity
[private]
```

6.34.4.2 BOUND_RATE

```
final int it.unibo.torsello.bluetoothpositioning.util.UsbUtil.BOUND_RATE = 115200 [static],  
[private]
```

6.34.4.3 mExecutor

```
final ExecutorService it.unibo.torsello.bluetoothpositioning.util.UsbUtil.mExecutor = Executors.  
newSingleThreadExecutor() [private]
```

6.34.4.4 mSerialIoManager

```
SerialInputOutputManager it.unibo.torsello.bluetoothpositioning.util.UsbUtil.mSerialIoManager  
[private]
```

6.34.4.5 myUsbObservable

```
UsbMeasurementObservable it.unibo.torsello.bluetoothpositioning.util.UsbUtil.myUsbObservable  
[private]
```

6.34.4.6 port

```
UsbSerialPort it.unibo.torsello.bluetoothpositioning.util.UsbUtil.port [private]
```

La documentazione per questa classe è stata generata a partire dal seguente file:

- [UsbUtil.java](#)

7 Documentazione dei file

7.1 Riferimenti per il file `ApplicationActivity.java`

Composti

- class [it.unibo.torsello.bluetoothpositioning.activities.ApplicationActivity](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.activities](#)

7.2 Riferimenti per il file `CameraFragment.java`

Composti

- class [it.unibo.torsello.bluetoothpositioning.fragment.CameraFragment](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.fragment](#)

7.3 Riferimenti per il file CameraPreviewUtil.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.util.CameraPreviewUtil](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.util](#)

7.4 Riferimenti per il file ChartUtil.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.util.ChartUtil](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.util](#)

7.5 Riferimenti per il file Device.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.model.Device](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.model](#)

7.6 Riferimenti per il file DeviceCardViewAdapter.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter](#)
- class [it.unibo.torsello.bluetoothpositioning.adapter.DeviceCardViewAdapter.DeviceViewHolder](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.adapter](#)

7.7 Riferimenti per il file DeviceChartFragment.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.fragment.DeviceChartFragment](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.fragment](#)

7.8 Riferimenti per il file DeviceConstants.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.constant.DeviceConstants](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.constant](#)

7.9 Riferimenti per il file DeviceDetailFragment.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailFragment](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.fragment](#)

7.10 Riferimenti per il file DeviceDetailInner0Fragment.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment](#)
- interface [it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingResume](#)
- interface [it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner0Fragment.OnRecordingReport](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.fragment](#)

7.11 Riferimenti per il file DeviceDetailInner1Fragment.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner1Fragment](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.fragment](#)

7.12 Riferimenti per il file DeviceDetailInner2Fragment.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailInner2Fragment](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.fragment](#)

7.13 Riferimenti per il file DeviceDetailReportFragment.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailReportFragment](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.fragment](#)

7.14 Riferimenti per il file DeviceDetailResumeFragment.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.fragment.DeviceDetailResumeFragment](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.fragment](#)

7.15 Riferimenti per il file DeviceListFragment.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.fragment.DeviceListFragment](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.fragment](#)

7.16 Riferimenti per il file DeviceObservable.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.observables.DeviceObservable](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.observables](#)

7.17 Riferimenti per il file Estimation.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.distanceEstimation.Estimation](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.distanceEstimation](#)

7.18 Riferimenti per il file FABBehavior.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.extra.FABBehavior](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.extra](#)

7.19 Riferimenti per il file KFilter.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilter](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter](#)

7.20 Riferimenti per il file KFilterBuilder.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter.KFilterBuilder](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter](#)

7.21 Riferimenti per il file KFilterConstants.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.constant.KFilterConstants](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.constant](#)

7.22 Riferimenti per il file MainActivity.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.activities.MainActivity](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.activities](#)

7.23 Riferimenti per il file MyArmaRssiFilter.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.filters.MyArmaRssiFilter](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.filters](#)

7.24 Riferimenti per il file ReportUtils.java

Composti

- class [it.unibo.torsello.bluetoothpositioning.util.ReportUtils](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.util](#)

7.25 Riferimenti per il file `SaveImageTask.java`

Composti

- class [it.unibo.torsello.bluetoothpositioning.task.SaveImageTask](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.task](#)

7.26 Riferimenti per il file `SettingConstants.java`

Composti

- class [it.unibo.torsello.bluetoothpositioning.constant.SettingConstants](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.constant](#)

7.27 Riferimenti per il file `SettingsFragment.java`

Composti

- class [it.unibo.torsello.bluetoothpositioning.fragment.SettingsFragment](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.fragment](#)

7.28 Riferimenti per il file `StatePagerAdapter.java`

Composti

- class [it.unibo.torsello.bluetoothpositioning.adapter.StatePagerAdapter](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.adapter](#)

7.29 Riferimenti per il file `UsbMeasurementFragment.java`

Composti

- class [it.unibo.torsello.bluetoothpositioning.fragment.UsbMeasurementFragment](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.fragment](#)

7.30 Riferimenti per il file `UsbMeasurementObservable.java`**Composti**

- class [it.unibo.torsello.bluetoothpositioning.observables.UsbMeasurementObservable](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.observables](#)

7.31 Riferimenti per il file `UsbUtil.java`**Composti**

- class [it.unibo.torsello.bluetoothpositioning.util.UsbUtil](#)

Package

- package [it.unibo.torsello.bluetoothpositioning.util](#)

Indice analitico

[static initializer]

it::unibo::torsello::bluetoothpositioning::constant↔
::DeviceConstants, [53](#)

A

it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilter, [98](#)

it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilterBuilder, [101](#), [102](#)

APPLE_BEACON_LAYOUT

it::unibo::torsello::bluetoothpositioning::constant↔
::DeviceConstants, [53](#)

ARMA_OPTION

it::unibo::torsello::bluetoothpositioning::constant↔
::SettingConstants, [128](#)

AVG_OPTION

it::unibo::torsello::bluetoothpositioning::constant↔
::SettingConstants, [128](#)

activity

it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter, [45](#)

it::unibo::torsello::bluetoothpositioning::task::↔
SaveImageTask, [127](#)

it::unibo::torsello::bluetoothpositioning::util::↔
CameraPreviewUtil, [28](#)

it::unibo::torsello::bluetoothpositioning::util::↔
ChartUtil, [35](#)

it::unibo::torsello::bluetoothpositioning::util::↔
ReportUtils, [123](#)

addChildFragment

it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailFragment, [56](#)

it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner0Fragment, [60](#)

it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner2Fragment, [70](#)

addMeasurement

it::unibo::torsello::bluetoothpositioning::filters::↔
MyArmaRssiFilter, [112](#)

address

it::unibo::torsello::bluetoothpositioning::model::↔
Device, [40](#)

altBeaconValues

it::unibo::torsello::bluetoothpositioning::util::↔
ReportUtils, [123](#)

altbeaconDistanceTextView

it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter::DeviceViewHolder,
[86](#)

applicationActivity

it::unibo::torsello::bluetoothpositioning::util::Usb↔
Util, [147](#)

ApplicationActivity.java, [148](#)

arduinoDistance

it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceChartFragment, [50](#)

arduinoValues

it::unibo::torsello::bluetoothpositioning::util::↔
ReportUtils, [123](#)

armaMeasurement

it::unibo::torsello::bluetoothpositioning::filters::↔
MyArmaRssiFilter, [113](#)

armaSpeed

it::unibo::torsello::bluetoothpositioning::filters::↔
MyArmaRssiFilter, [113](#)

B

it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilter, [99](#)

it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilterBuilder, [101](#), [102](#)

BOUND_RATE

it::unibo::torsello::bluetoothpositioning::util::Usb↔
Util, [147](#)

back_pressed

it::unibo::torsello::bluetoothpositioning::activities↔
::MainActivity, [109](#)

backgroundPowerSaver

it::unibo::torsello::bluetoothpositioning::activities↔
::ApplicationActivity, [17](#)

beacon

it::unibo::torsello::bluetoothpositioning::model::↔
Device, [40](#)

beaconManager

it::unibo::torsello::bluetoothpositioning::activities↔
::ApplicationActivity, [17](#)

build

it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilterBuilder, [101](#)

C

it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilter, [99](#)

it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilterBuilder, [101](#), [102](#)

calculateAverage

it::unibo::torsello::bluetoothpositioning::util::↔
ReportUtils, [118](#)

calculateDistance

it::unibo::torsello::bluetoothpositioning::distance↔
Estimation::Estimation, [90](#)

calculateRssi

it::unibo::torsello::bluetoothpositioning::filters::↔
MyArmaRssiFilter, [112](#)

camera

it::unibo::torsello::bluetoothpositioning::fragment↔
::CameraFragment, [21](#)

CameraFragment.java, [148](#)

CameraPreviewUtil

it::unibo::torsello::bluetoothpositioning::util::↔
CameraPreviewUtil, [24](#)

CameraPreviewUtil.java, [149](#)

chart
 it::unibo::torsello::bluetoothpositioning::util::↔
 ChartUtil, 35
 chartName
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceChartFragment, 50
 ChartUtil
 it::unibo::torsello::bluetoothpositioning::util::↔
 ChartUtil, 32
 chartUtil
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceChartFragment, 50
 ChartUtil.java, 149
 check
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceDetailInner0Fragment, 62
 checkAndroidMPPermission
 it::unibo::torsello::bluetoothpositioning::activities↔
 ::MainActivity, 107
 clearRecordedValues
 it::unibo::torsello::bluetoothpositioning::util::↔
 ReportUtils, 118
 closePort
 it::unibo::torsello::bluetoothpositioning::util::Usb↔
 Util, 145
 color
 it::unibo::torsello::bluetoothpositioning::model::↔
 Device, 40
 colorTextView
 it::unibo::torsello::bluetoothpositioning::adapter::↔
 DeviceCardViewAdapter::DeviceViewHolder,
 86
 cov
 it::unibo::torsello::bluetoothpositioning::filters↔
 ::kalmanFilter::KFilter, 99
 createDataSet
 it::unibo::torsello::bluetoothpositioning::util::↔
 ChartUtil, 32
 createJson
 it::unibo::torsello::bluetoothpositioning::util::↔
 ReportUtils, 118
 DEVICE_1
 it::unibo::torsello::bluetoothpositioning::constant↔
 ::DeviceConstants, 53
 DEVICE_2
 it::unibo::torsello::bluetoothpositioning::constant↔
 ::DeviceConstants, 53
 DEVICE_3
 it::unibo::torsello::bluetoothpositioning::constant↔
 ::DeviceConstants, 53
 DEVICE_4
 it::unibo::torsello::bluetoothpositioning::constant↔
 ::DeviceConstants, 53
 DEVICE_5
 it::unibo::torsello::bluetoothpositioning::constant↔
 ::DeviceConstants, 53
 DEVICE_6
 it::unibo::torsello::bluetoothpositioning::constant↔
 ::DeviceConstants, 53
 DEVICE_DETAIL_FRAGMENT
 it::unibo::torsello::bluetoothpositioning::adapter::↔
 DeviceCardViewAdapter, 45
 DEVICE_FRAGMENT
 it::unibo::torsello::bluetoothpositioning::activities↔
 ::MainActivity, 109
 DEVICE_MAP
 it::unibo::torsello::bluetoothpositioning::constant↔
 ::DeviceConstants, 53
 DEVICE_NAME
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceChartFragment, 50
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceDetailInner0Fragment, 62
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceDetailInner2Fragment, 71
 DISTANCE_SORTING
 it::unibo::torsello::bluetoothpositioning::constant↔
 ::SettingConstants, 128
 dataSets
 it::unibo::torsello::bluetoothpositioning::util::↔
 ChartUtil, 35
 defaultNameTextView
 it::unibo::torsello::bluetoothpositioning::adapter::↔
 DeviceCardViewAdapter::DeviceViewHolder,
 86
 Device
 it::unibo::torsello::bluetoothpositioning::model::↔
 Device, 37
 Device.java, 149
 DeviceCardViewAdapter
 it::unibo::torsello::bluetoothpositioning::adapter::↔
 DeviceCardViewAdapter, 42
 DeviceCardViewAdapter.java, 149
 DeviceChartFragment.java, 150
 DeviceConstants.java, 150
 DeviceDetailFragment.java, 150
 DeviceDetailInner0Fragment.java, 150
 DeviceDetailInner1Fragment.java, 150
 DeviceDetailInner2Fragment.java, 151
 DeviceDetailReportFragment.java, 151
 DeviceDetailResumeFragment.java, 151
 deviceList
 it::unibo::torsello::bluetoothpositioning::activities↔
 ::ApplicationActivity, 17
 it::unibo::torsello::bluetoothpositioning::adapter::↔
 DeviceCardViewAdapter, 46
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceDetailInner1Fragment, 67
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceListFragment, 80
 DeviceListFragment.java, 151
 DeviceObservable
 it::unibo::torsello::bluetoothpositioning::observables↔
 ::DeviceObservable, 82
 DeviceObservable.java, 152

- deviceViewAdapter
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner1Fragment, 67
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceListFragment, 80
- DeviceViewHolder
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter::DeviceViewHolder,
85
- df
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter, 46
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::SettingsFragment, 134
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::UsbMeasurementFragment, 141
 - it::unibo::torsello::bluetoothpositioning::util::↔
ReportUtils, 123
- distanceEstimated
 - it::unibo::torsello::bluetoothpositioning::distance↔
Estimation::Estimation, 92
- doInBackground
 - it::unibo::torsello::bluetoothpositioning::task::↔
SaveImageTask, 126
- ESTIMATE_NEARABLE_LAYOUT
 - it::unibo::torsello::bluetoothpositioning::constant↔
::DeviceConstants, 54
- EXTRA_MESSAGE
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
StatePagerAdapter, 137
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceChartFragment, 50
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailFragment, 57
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner0Fragment, 62
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner1Fragment, 67
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner2Fragment, 71
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailReportFragment, 74
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailResumeFragment, 77
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceListFragment, 81
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::SettingsFragment, 134
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::UsbMeasurementFragment, 141
- enableArmaFilter
 - it::unibo::torsello::bluetoothpositioning::filters::↔
MyArmaRssiFilter, 112
- estimateKalmanFilterDistance
 - it::unibo::torsello::bluetoothpositioning::distance↔
Estimation::Estimation, 90
- estimateRawDistance
 - it::unibo::torsello::bluetoothpositioning::distance↔
Estimation::Estimation, 90
- Estimation
 - it::unibo::torsello::bluetoothpositioning::distance↔
Estimation::Estimation, 89
- estimation
 - it::unibo::torsello::bluetoothpositioning::model::↔
Device, 40
- Estimation.java, 152
- FABBehavior
 - it::unibo::torsello::bluetoothpositioning::extra::FA↔
BBehavior, 94
- FABBehavior.java, 152
- FILTER_RSSI
 - it::unibo::torsello::bluetoothpositioning::constant↔
::SettingConstants, 128
- filter
 - it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilter, 97
- formattedDate
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceChartFragment, 50
- fragments
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
StatePagerAdapter, 137
- friendlyName
 - it::unibo::torsello::bluetoothpositioning::model::↔
Device, 40
- friendlyNameTextView
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter::DeviceViewHolder,
86
- getActivity
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter, 42
 - it::unibo::torsello::bluetoothpositioning::task::↔
SaveImageTask, 126
 - it::unibo::torsello::bluetoothpositioning::util::↔
CameraPreviewUtil, 24
 - it::unibo::torsello::bluetoothpositioning::util::↔
ChartUtil, 32
 - it::unibo::torsello::bluetoothpositioning::util::↔
ReportUtils, 119
 - it::unibo::torsello::bluetoothpositioning::util::Usb↔
Util, 145
- getAddress
 - it::unibo::torsello::bluetoothpositioning::model::↔
Device, 37
- getAltBeaconDistance
 - it::unibo::torsello::bluetoothpositioning::model::↔
Device, 37
- getArmaSpeed
 - it::unibo::torsello::bluetoothpositioning::filters::↔
MyArmaRssiFilter, 112
- getBeacon
 - it::unibo::torsello::bluetoothpositioning::model::↔
Device, 38

getCalculatedNoise
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::SettingsFragment, 131

getCamera
 it::unibo::torsello::bluetoothpositioning::util::↔
 CameraPreviewUtil, 24

getCameraInstance
 it::unibo::torsello::bluetoothpositioning::util::↔
 CameraPreviewUtil, 24

getColor
 it::unibo::torsello::bluetoothpositioning::model::↔
 Device, 38

getCount
 it::unibo::torsello::bluetoothpositioning::adapter::↔
 StatePagerAdapter, 137

getDistanceWOSC
 it::unibo::torsello::bluetoothpositioning::distance↔
 Estimation::Estimation, 90
 it::unibo::torsello::bluetoothpositioning::model::↔
 Device, 38

getFragments
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceDetailFragment, 56
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceDetailInner0Fragment, 60
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceDetailInner2Fragment, 70

getFriendlyName
 it::unibo::torsello::bluetoothpositioning::model::↔
 Device, 38

getImageBeacon
 it::unibo::torsello::bluetoothpositioning::model::↔
 Device, 38

getIndex
 it::unibo::torsello::bluetoothpositioning::model::↔
 Device, 38

getInstance
 it::unibo::torsello::bluetoothpositioning::observables↔
 ::DeviceObservable, 83
 it::unibo::torsello::bluetoothpositioning::observables↔
 ::UsbMeasurementObservable, 143

getItem
 it::unibo::torsello::bluetoothpositioning::adapter::↔
 StatePagerAdapter, 137

getItemCount
 it::unibo::torsello::bluetoothpositioning::adapter::↔
 DeviceCardViewAdapter, 42

getJson
 it::unibo::torsello::bluetoothpositioning::util::↔
 ReportUtils, 120

getKalmanFilterDistance
 it::unibo::torsello::bluetoothpositioning::distance↔
 Estimation::Estimation, 91
 it::unibo::torsello::bluetoothpositioning::model::↔
 Device, 39

getOptimalPreviewSize
 it::unibo::torsello::bluetoothpositioning::util::↔
 CameraPreviewUtil, 25

getPageTitle
 it::unibo::torsello::bluetoothpositioning::adapter::↔
 StatePagerAdapter, 137

getProximity
 it::unibo::torsello::bluetoothpositioning::distance↔
 Estimation::Estimation, 91
 it::unibo::torsello::bluetoothpositioning::model::↔
 Device, 39

getRandomColor
 it::unibo::torsello::bluetoothpositioning::util::↔
 ChartUtil, 32

getRawDistance
 it::unibo::torsello::bluetoothpositioning::distance↔
 Estimation::Estimation, 91
 it::unibo::torsello::bluetoothpositioning::model::↔
 Device, 39

getResume
 it::unibo::torsello::bluetoothpositioning::util::↔
 ReportUtils, 120

getRssiFilterSelected
 it::unibo::torsello::bluetoothpositioning::activities↔
 ::ApplicationActivity, 12

gson
 it::unibo::torsello::bluetoothpositioning::util::↔
 ReportUtils, 123

INITIAL_MEASUREMENT_NOISE
 it::unibo::torsello::bluetoothpositioning::constant↔
 ::KFilterConstants, 103

INITIAL_PROCESS_NOISE
 it::unibo::torsello::bluetoothpositioning::constant↔
 ::KFilterConstants, 103

ID
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceChartFragment, 50

id
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceChartFragment, 50

idDeviceSelected
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceChartFragment, 51

idDeviceSelectedName
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceDetailFragment, 57
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceDetailInner0Fragment, 63
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceDetailInner1Fragment, 67
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceDetailInner2Fragment, 72
 it::unibo::torsello::bluetoothpositioning::util::↔
 ReportUtils, 123

imageBeacon
 it::unibo::torsello::bluetoothpositioning::model::↔
 Device, 40

imageView
 it::unibo::torsello::bluetoothpositioning::adapter::↔
 DeviceCardViewAdapter::DeviceViewHolder,
 86

index
 it::unibo::torsello::bluetoothpositioning::model::↔
 Device, 40

indexFile
 it::unibo::torsello::bluetoothpositioning::util::↔
 ReportUtils, 123

initializeBeaconManager
 it::unibo::torsello::bluetoothpositioning::activities↔
 ::ApplicationActivity, 12

initializeChart
 it::unibo::torsello::bluetoothpositioning::util::↔
 ChartUtil, 33

initializeDataChart
 it::unibo::torsello::bluetoothpositioning::util::↔
 ChartUtil, 33

initializeDeviceDetail
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceDetailInner1 Fragment, 65
 it::unibo::torsello::bluetoothpositioning::fragment↔
 ::DeviceListFragment, 79

initializeFloatingActionButton
 it::unibo::torsello::bluetoothpositioning::activities↔
 ::ApplicationActivity, 12

initializeUsb
 it::unibo::torsello::bluetoothpositioning::util::Usb↔
 Util, 145

instance
 it::unibo::torsello::bluetoothpositioning::observables↔
 ::DeviceObservable, 83
 it::unibo::torsello::bluetoothpositioning::observables↔
 ::UsbMeasurementObservable, 144

instanceTextView
 it::unibo::torsello::bluetoothpositioning::adapter::↔
 DeviceCardViewAdapter::DeviceViewHolder,
 86

isBackPressed
 it::unibo::torsello::bluetoothpositioning::activities↔
 ::MainActivity, 109

isBluetoothAvailable
 it::unibo::torsello::bluetoothpositioning::activities↔
 ::ApplicationActivity, 13

isEnabled
 it::unibo::torsello::bluetoothpositioning::filters::↔
 MyArmaRssiFilter, 113

isExternalStorageWritable
 it::unibo::torsello::bluetoothpositioning::task::↔
 SaveImageTask, 126
 it::unibo::torsello::bluetoothpositioning::util::↔
 ReportUtils, 121

isInitialized
 it::unibo::torsello::bluetoothpositioning::filters::↔
 MyArmaRssiFilter, 113

isKalmanFilterEnabled
 it::unibo::torsello::bluetoothpositioning::distance↔
 Estimation::Estimation, 91
 it::unibo::torsello::bluetoothpositioning::model::↔
 Device, 39

isRunScan
 it::unibo::torsello::bluetoothpositioning::activities↔
 ::ApplicationActivity, 17

it, 6
it.unibo, 7
it.unibo.torsello, 7
it.unibo.torsello.bluetoothpositioning, 7
it.unibo.torsello.bluetoothpositioning.activities, 7
it.unibo.torsello.bluetoothpositioning.activities.Application↔
 Activity, 10
it.unibo.torsello.bluetoothpositioning.activities.Main↔
 Activity, 105
it.unibo.torsello.bluetoothpositioning.adapter, 7
it.unibo.torsello.bluetoothpositioning.adapter.Device↔
 CardViewAdapter, 41
it.unibo.torsello.bluetoothpositioning.adapter.Device↔
 CardViewAdapter.DeviceViewHolder, 84
it.unibo.torsello.bluetoothpositioning.adapter.State↔
 PagerAdapter, 135
it.unibo.torsello.bluetoothpositioning.constant, 8
it.unibo.torsello.bluetoothpositioning.constant.Device↔
 Constants, 52
it.unibo.torsello.bluetoothpositioning.constant.KFilter↔
 Constants, 103
it.unibo.torsello.bluetoothpositioning.constant.Setting↔
 Constants, 127
it.unibo.torsello.bluetoothpositioning.distanceEstimation,
 8
it.unibo.torsello.bluetoothpositioning.distanceEstimation.↔
 Estimation, 88
it.unibo.torsello.bluetoothpositioning.extra, 8
it.unibo.torsello.bluetoothpositioning.extra.FABBehavior,
 93
it.unibo.torsello.bluetoothpositioning.filters, 8
it.unibo.torsello.bluetoothpositioning.filters.kalmanFilter,
 8
it.unibo.torsello.bluetoothpositioning.filters.kalman↔
 Filter.KFilter, 95
it.unibo.torsello.bluetoothpositioning.filters.kalman↔
 Filter.KFilterBuilder, 100
it.unibo.torsello.bluetoothpositioning.filters.MyArma↔
 RssiFilter, 110
it.unibo.torsello.bluetoothpositioning.fragment, 8
it.unibo.torsello.bluetoothpositioning.fragment.Camera↔
 Fragment, 18
it.unibo.torsello.bluetoothpositioning.fragment.Device↔
 ChartFragment, 46
it.unibo.torsello.bluetoothpositioning.fragment.Device↔
 DetailFragment, 54
it.unibo.torsello.bluetoothpositioning.fragment.Device↔
 DetailInner0Fragment, 58
it.unibo.torsello.bluetoothpositioning.fragment.Device↔
 DetailInner0Fragment.OnRecordingReport,
 114
it.unibo.torsello.bluetoothpositioning.fragment.Device↔
 DetailInner0Fragment.OnRecordingResume,
 115
it.unibo.torsello.bluetoothpositioning.fragment.Device↔
 DetailInner1Fragment, 64

- it.unibo.torsello.bluetoothpositioning.fragment.Device↔
 - DetailInner2Fragment, 68
- it.unibo.torsello.bluetoothpositioning.fragment.Device↔
 - DetailReportFragment, 72
- it.unibo.torsello.bluetoothpositioning.fragment.Device↔
 - DetailResumeFragment, 75
- it.unibo.torsello.bluetoothpositioning.fragment.Device↔
 - ListFragment, 77
- it.unibo.torsello.bluetoothpositioning.fragment.Settings↔
 - Fragment, 129
- it.unibo.torsello.bluetoothpositioning.fragment.Usb↔
 - MeasurementFragment, 138
- it.unibo.torsello.bluetoothpositioning.model, 9
- it.unibo.torsello.bluetoothpositioning.model.Device, 36
- it.unibo.torsello.bluetoothpositioning.observables, 9
- it.unibo.torsello.bluetoothpositioning.observables.↔
 - DeviceObservable, 81
- it.unibo.torsello.bluetoothpositioning.observables.Usb↔
 - MeasurementObservable, 142
- it.unibo.torsello.bluetoothpositioning.task, 9
- it.unibo.torsello.bluetoothpositioning.task.SaveImage↔
 - Task, 124
- it.unibo.torsello.bluetoothpositioning.util, 9
- it.unibo.torsello.bluetoothpositioning.util.Camera↔
 - PreviewUtil, 22
- it.unibo.torsello.bluetoothpositioning.util.ChartUtil, 30
- it.unibo.torsello.bluetoothpositioning.util.ReportUtils, 116
- it.unibo.torsello.bluetoothpositioning.util.UsbUtil, 144
- it::unibo::torsello::bluetoothpositioning::activities::↔
 - ApplicationActivity
 - backgroundPowerSaver, 17
 - beaconManager, 17
 - deviceList, 17
 - getRssiFilterSelected, 12
 - initializeBeaconManager, 12
 - initializeFloatingActionButton, 12
 - isBluetoothAvailable, 13
 - isRunScan, 17
 - myDeviceObservable, 17
 - onBeaconServiceConnect, 13
 - onCreate, 14
 - onDestroy, 14
 - onPause, 15
 - onResume, 15
 - preferences, 18
 - rssiFilterSelected, 18
 - setArmaOptionsVisible, 15
 - setAvgOptionsVisible, 15
 - setRssiFilter, 16
 - setSettingsVisible, 17
 - usbUtil, 18
- it::unibo::torsello::bluetoothpositioning::activities::↔
 - MainActivity
 - back_pressed, 107
 - checkAndroidMPPermission, 107
 - DEVICE_FRAGMENT, 109
 - isBackPressed, 109
 - onBackPressed, 107
 - onCreate, 107
 - onNavigationItemSelected, 108
 - onRequestPermissionsResult, 108
 - REQUEST_CODE_ASK_MULTIPLE_PERMISS↔
 - IONS, 109
 - replaceFragment, 109
 - USB_MEASUREMENT_FRAGMENT, 110
- it::unibo::torsello::bluetoothpositioning::adapter::↔
 - DeviceCardViewAdapter
 - activity, 45
 - DEVICE_DETAIL_FRAGMENT, 45
 - DeviceCardViewAdapter, 42
 - deviceList, 46
 - df, 46
 - getActivity, 42
 - getItemCount, 42
 - onBindViewHolder, 43
 - onCreateViewHolder, 44
 - setDistance, 44
 - setInfoDevice, 44
- it::unibo::torsello::bluetoothpositioning::adapter::↔
 - DeviceCardViewAdapter::DeviceViewHolder
 - altbeaconDistanceTextView, 86
 - colorTextView, 86
 - defaultNameTextView, 86
 - DeviceViewHolder, 85
 - friendlyNameTextView, 86
 - imageView, 86
 - instanceTextView, 86
 - kalmanFilterDistanceTextView, 86
 - macTextView, 87
 - majorTextView, 87
 - minorTextView, 87
 - nameSpaceTextView, 87
 - proximityTextView, 87
 - rssiTextView, 87
 - standardRawDistanceTextView, 87
 - txPowerTextView, 87
 - uuidTextView, 87
 - view, 87
 - visibilityNameSpaceLinearLayout, 88
 - visibilityUIDLinearLayout, 88
- it::unibo::torsello::bluetoothpositioning::adapter::State↔
 - PagerAdapter
 - EXTRA_MESSAGE, 137
 - fragments, 137
 - getCount, 137
 - getItem, 137
 - getPageTitle, 137
 - StatePagerAdapter, 137
- it::unibo::torsello::bluetoothpositioning::constant::↔
 - DeviceConstants
 - [static initializer], 53
 - APPLE_BEACON_LAYOUT, 53
 - DEVICE_1, 53
 - DEVICE_2, 53
 - DEVICE_3, 53

- DEVICE_4, [53](#)
- DEVICE_5, [53](#)
- DEVICE_6, [53](#)
- DEVICE_MAP, [53](#)
- ESTIMOTE_NEARABLE_LAYOUT, [54](#)
- it::unibo::torsello::bluetoothpositioning::constant::K↔
 - FilterConstants
 - INITIAL_MEASUREMENT_NOISE, [103](#)
 - INITIAL_PROCESS_NOISE, [103](#)
 - KALMAN_NOISE_MAX, [104](#)
 - KALMAN_NOISE_MIN, [104](#)
 - WINDOW, [104](#)
- it::unibo::torsello::bluetoothpositioning::constant::↔
 - SettingConstants
 - ARMA_OPTION, [128](#)
 - AVG_OPTION, [128](#)
 - DISTANCE_SORTING, [128](#)
 - FILTER_RSSI, [128](#)
 - KALMAN_FILTER_ENABLED, [128](#)
 - KALMAN_NOISE_VALUE, [128](#)
 - KALMAN_SEEKBAR_VALUE, [128](#)
 - SETTINGS_PREFERENCES, [129](#)
- it::unibo::torsello::bluetoothpositioning::distance↔
 - Estimation::Estimation
 - calculateDistance, [90](#)
 - distanceEstimated, [92](#)
 - estimateKalmanFilterDistance, [90](#)
 - estimateRawDistance, [90](#)
 - Estimation, [89](#)
 - getDistanceWOSC, [90](#)
 - getKalmanFilterDistance, [91](#)
 - getProximity, [91](#)
 - getRawDistance, [91](#)
 - isKalmanFilterEnabled, [91](#)
 - kalmanFilterEnabled, [92](#)
 - kf, [92](#)
 - rawDistanceEstimated, [92](#)
 - recentRSSI, [92](#)
 - recentTxPower, [92](#)
 - updateDistance, [91](#)
 - WOSC, [92](#)
- it::unibo::torsello::bluetoothpositioning::extra::FAB↔
 - Behavior
 - FABBehavior, [94](#)
 - onNestedScroll, [94](#)
 - onStartNestedScroll, [94](#)
- it::unibo::torsello::bluetoothpositioning::filters::My↔
 - ArmaRssiFilter
 - addMeasurement, [112](#)
 - armaMeasurement, [113](#)
 - armaSpeed, [113](#)
 - calculateRssi, [112](#)
 - enableArmaFilter, [112](#)
 - getArmaSpeed, [112](#)
 - isEnabled, [113](#)
 - isInitialized, [113](#)
 - noMeasurementsAvailable, [112](#)
 - setArmaSpeed, [113](#)
- it::unibo::torsello::bluetoothpositioning::filters::kalman↔
 - Filter::KFilter
 - A, [98](#)
 - B, [99](#)
 - C, [99](#)
 - cov, [99](#)
 - filter, [97](#)
 - KFilter, [96](#)
 - lastMeasurement, [98](#)
 - Q, [99](#)
 - R, [99](#)
 - setMeasurementNoise, [98](#)
 - setProcessNoise, [98](#)
 - x, [99](#)
 - x1, [99](#)
 - x2, [99](#)
- it::unibo::torsello::bluetoothpositioning::filters::kalman↔
 - Filter::KFilterBuilder
 - A, [101](#), [102](#)
 - B, [101](#), [102](#)
 - build, [101](#)
 - C, [101](#), [102](#)
 - Q, [101](#), [102](#)
 - R, [101](#), [102](#)
- it::unibo::torsello::bluetoothpositioning::fragment::↔
 - CameraFragment
 - camera, [21](#)
 - newInstance, [19](#)
 - onActivityCreated, [19](#)
 - onCreateView, [20](#)
 - onPause, [20](#)
 - onResume, [20](#)
 - preview, [21](#)
- it::unibo::torsello::bluetoothpositioning::fragment::↔
 - DeviceChartFragment
 - arduinoDistance, [50](#)
 - chartName, [50](#)
 - chartUtil, [50](#)
 - DEVICE_NAME, [50](#)
 - EXTRA_MESSAGE, [50](#)
 - formattedDate, [50](#)
 - ID, [50](#)
 - id, [50](#)
 - idDeviceSelected, [51](#)
 - myDeviceObservable, [51](#)
 - myUsbObservable, [51](#)
 - newInstance, [48](#)
 - onCreate, [48](#)
 - onCreateView, [48](#)
 - onPause, [49](#)
 - onResume, [49](#)
 - STRINGS, [51](#)
 - stringArrayList, [51](#)
 - update, [49](#)
- it::unibo::torsello::bluetoothpositioning::fragment::↔
 - DeviceDetailFragment
 - addChildFragment, [56](#)
 - EXTRA_MESSAGE, [57](#)

- getFragments, 56
- idDeviceSelectedName, 57
- newInstance, 56
- onCreate, 56
- onCreateView, 57
- onPause, 57
- it::unibo::torsello::bluetoothpositioning::fragment::↔
 - DeviceDetailInner0Fragment
 - addChildFragment, 60
 - check, 62
 - DEVICE_NAME, 62
 - EXTRA_MESSAGE, 62
 - getFragments, 60
 - idDeviceSelectedName, 63
 - myDeviceObservable, 63
 - myUsbObservable, 63
 - newInstance, 60
 - onAttachFragment, 60
 - onCreate, 60
 - onCreateView, 61
 - onPause, 61
 - onRecordingReport, 63
 - onRecordingResume, 63
 - onResume, 61
 - reportUtils, 63
 - update, 62
- it::unibo::torsello::bluetoothpositioning::fragment::↔
 - DeviceDetailInner0Fragment::OnRecording↔
 - Report
 - record, 115
- it::unibo::torsello::bluetoothpositioning::fragment::↔
 - DeviceDetailInner0Fragment::OnRecording↔
 - Resume
 - record, 116
- it::unibo::torsello::bluetoothpositioning::fragment::↔
 - DeviceDetailInner1Fragment
 - deviceList, 67
 - deviceViewAdapter, 67
 - EXTRA_MESSAGE, 67
 - idDeviceSelectedName, 67
 - initializeDeviceDetail, 65
 - myObservable, 67
 - newInstance, 65
 - onCreate, 66
 - onCreateView, 66
 - onPause, 66
 - onResume, 66
 - update, 67
- it::unibo::torsello::bluetoothpositioning::fragment::↔
 - DeviceDetailInner2Fragment
 - addChildFragment, 70
 - DEVICE_NAME, 71
 - EXTRA_MESSAGE, 71
 - getFragments, 70
 - idDeviceSelectedName, 72
 - newInstance, 70
 - onCreate, 71
 - onCreateView, 71
 - onPause, 71
- it::unibo::torsello::bluetoothpositioning::fragment::↔
 - DeviceDetailReportFragment
 - EXTRA_MESSAGE, 74
 - newInstance, 73
 - onCreate, 73
 - onCreateView, 73
 - record, 74
 - textView, 74
- it::unibo::torsello::bluetoothpositioning::fragment::↔
 - DeviceDetailResumeFragment
 - EXTRA_MESSAGE, 77
 - newInstance, 76
 - onCreateView, 76
 - record, 76
 - textView, 77
- it::unibo::torsello::bluetoothpositioning::fragment::↔
 - DeviceListFragment
 - deviceList, 80
 - deviceViewAdapter, 80
 - EXTRA_MESSAGE, 81
 - initializeDeviceDetail, 79
 - myObservable, 81
 - newInstance, 79
 - onCreate, 79
 - onCreateView, 79
 - onPause, 79
 - onResume, 80
 - preferences, 81
 - update, 80
- it::unibo::torsello::bluetoothpositioning::fragment::↔
 - SettingsFragment
 - df, 134
 - EXTRA_MESSAGE, 134
 - getCalculatedNoise, 131
 - newInstance, 131
 - onCreate, 131
 - onCreateView, 131
 - preferences, 134
 - setArmaOption, 132
 - setAvgOption, 132
 - setFiltering, 132
 - setKalmanFilterSeekBar, 133
 - setSorting, 133
- it::unibo::torsello::bluetoothpositioning::fragment::Usb↔
 - MeasurementFragment
 - df, 141
 - EXTRA_MESSAGE, 141
 - myUsbObservable, 141
 - newInstance, 140
 - onCreate, 140
 - onCreateView, 140
 - onPause, 140
 - onResume, 140
 - twDistance, 141
 - twState, 141
 - update, 140
- it::unibo::torsello::bluetoothpositioning::model::Device

- address, 40
- beacon, 40
- color, 40
- Device, 37
- estimation, 40
- friendlyName, 40
- getAddress, 37
- getAltBeaconDistance, 37
- getBeacon, 38
- getColor, 38
- getDistanceWOSC, 38
- getFriendlyName, 38
- getImageBeacon, 38
- getIndex, 38
- getKalmanFilterDistance, 39
- getProximity, 39
- getRawDistance, 39
- imageBeacon, 40
- index, 40
- isKalmanFilterEnabled, 39
- setBeacon, 39
- updateDistance, 39
- it::unibo::torskello::bluetoothpositioning::observables::↔
 - DeviceObservable
 - DeviceObservable, 82
 - getInstance, 83
 - instance, 83
 - notifyObservers, 83
- it::unibo::torskello::bluetoothpositioning::observables::↔
 - UsbMeasurementObservable
 - getInstance, 143
 - instance, 144
 - notifyObservers, 143
 - UsbMeasurementObservable, 143
- it::unibo::torskello::bluetoothpositioning::task::Save↔
 - ImageTask
 - activity, 127
 - doInBackground, 126
 - getActivity, 126
 - isExternalStorageWritable, 126
 - refreshGallery, 126
 - SaveImageTask, 126
- it::unibo::torskello::bluetoothpositioning::util::Camera↔
 - PreviewUtil
 - activity, 28
 - CameraPreviewUtil, 24
 - getActivity, 24
 - getCamera, 24
 - getCameraInstance, 24
 - getOptimalPreviewSize, 25
 - jpegCallback, 28
 - mCamera, 28
 - mHolder, 29
 - mPreviewSize, 29
 - mSupportedPreviewSizes, 29
 - mSurfaceView, 29
 - onLayout, 25
 - onMeasure, 26
 - onPause, 26
 - rawCallback, 29
 - resetCamera, 26
 - setCamera, 27
 - shutterCallback, 29
 - surfaceChanged, 27
 - surfaceCreated, 27
 - surfaceDestroyed, 28
 - takePicture, 28
- it::unibo::torskello::bluetoothpositioning::util::ChartUtil
 - activity, 35
 - chart, 35
 - ChartUtil, 32
 - createDataSet, 32
 - dataSets, 35
 - getActivity, 32
 - getRandomColor, 32
 - initializeChart, 33
 - initializeDataChart, 33
 - onNothingSelected, 33
 - onValueSelected, 34
 - plotValue, 34
 - saveImageChart, 34
 - setChart, 34
 - thread, 35
 - updateDataSet, 35
- it::unibo::torskello::bluetoothpositioning::util::ReportUtils
 - activity, 123
 - altBeaconValues, 123
 - arduinoValues, 123
 - calculateAverage, 118
 - clearRecordedValues, 118
 - createJson, 118
 - df, 123
 - getActivity, 119
 - getJson, 120
 - getResume, 120
 - gson, 123
 - idDeviceSelectedName, 123
 - indexFile, 123
 - isExternalStorageWritable, 121
 - jsonFile, 123
 - kFilterValues, 123
 - preferences, 124
 - rawValues, 124
 - refreshDirectory, 121
 - ReportUtils, 118
 - rsiFilterSelected, 124
 - sdf, 124
 - setAltBeaconValues, 121
 - setArduinoValues, 121
 - setRawValues, 122
 - setkFilterValues, 121
 - writeJsonFile, 122
- it::unibo::torskello::bluetoothpositioning::util::UsbUtil
 - applicationActivity, 147
 - BOUND_RATE, 147
 - closePort, 145

- getActivity, [145](#)
 - initializeUsb, [145](#)
 - mExecutor, [148](#)
 - mSerialloManager, [148](#)
 - myUsbObservable, [148](#)
 - onPause, [146](#)
 - onResume, [146](#)
 - port, [148](#)
 - startIoManager, [147](#)
 - stopIoManager, [147](#)
 - UsbUtil, [145](#)
- jpegCallback
 - it::unibo::torsello::bluetoothpositioning::util::↔
CameraPreviewUtil, [28](#)
- jsonFile
 - it::unibo::torsello::bluetoothpositioning::util::↔
ReportUtils, [123](#)
- KALMAN_FILTER_ENABLED
 - it::unibo::torsello::bluetoothpositioning::constant↔
::SettingConstants, [128](#)
- KALMAN_NOISE_MAX
 - it::unibo::torsello::bluetoothpositioning::constant↔
::KFilterConstants, [104](#)
- KALMAN_NOISE_MIN
 - it::unibo::torsello::bluetoothpositioning::constant↔
::KFilterConstants, [104](#)
- KALMAN_NOISE_VALUE
 - it::unibo::torsello::bluetoothpositioning::constant↔
::SettingConstants, [128](#)
- KALMAN_SEEKBAR_VALUE
 - it::unibo::torsello::bluetoothpositioning::constant↔
::SettingConstants, [128](#)
- KFilter
 - it::unibo::torsello::bluetoothpositioning::filters↔
:kalmanFilter::KFilter, [96](#)
- KFilter.java, [152](#)
- KFilterBuilder.java, [152](#)
- KFilterConstants.java, [153](#)
- KFilterValues
 - it::unibo::torsello::bluetoothpositioning::util::↔
ReportUtils, [123](#)
- kalmanFilterDistanceTextView
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter::DeviceViewHolder,
[86](#)
- kalmanFilterEnabled
 - it::unibo::torsello::bluetoothpositioning::distance↔
Estimation::Estimation, [92](#)
- kf
 - it::unibo::torsello::bluetoothpositioning::distance↔
Estimation::Estimation, [92](#)
- lastMeasurement
 - it::unibo::torsello::bluetoothpositioning::filters↔
:kalmanFilter::KFilter, [98](#)
- mCamera
 - it::unibo::torsello::bluetoothpositioning::util::↔
CameraPreviewUtil, [28](#)
- mExecutor
 - it::unibo::torsello::bluetoothpositioning::util::Usb↔
Util, [148](#)
- mHolder
 - it::unibo::torsello::bluetoothpositioning::util::↔
CameraPreviewUtil, [29](#)
- mPreviewSize
 - it::unibo::torsello::bluetoothpositioning::util::↔
CameraPreviewUtil, [29](#)
- mSerialloManager
 - it::unibo::torsello::bluetoothpositioning::util::Usb↔
Util, [148](#)
- mSupportedPreviewSizes
 - it::unibo::torsello::bluetoothpositioning::util::↔
CameraPreviewUtil, [29](#)
- mSurfaceView
 - it::unibo::torsello::bluetoothpositioning::util::↔
CameraPreviewUtil, [29](#)
- macTextView
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter::DeviceViewHolder,
[87](#)
- MainActivity.java, [153](#)
- majorTextView
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter::DeviceViewHolder,
[87](#)
- minorTextView
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter::DeviceViewHolder,
[87](#)
- MyArmaRssiFilter.java, [153](#)
- myDeviceObservable
 - it::unibo::torsello::bluetoothpositioning::activities↔
:ApplicationActivity, [17](#)
 - it::unibo::torsello::bluetoothpositioning::fragment↔
:DeviceChartFragment, [51](#)
 - it::unibo::torsello::bluetoothpositioning::fragment↔
:DeviceDetailInner0Fragment, [63](#)
- myObservable
 - it::unibo::torsello::bluetoothpositioning::fragment↔
:DeviceDetailInner1Fragment, [67](#)
 - it::unibo::torsello::bluetoothpositioning::fragment↔
:DeviceListFragment, [81](#)
- myUsbObservable
 - it::unibo::torsello::bluetoothpositioning::fragment↔
:DeviceChartFragment, [51](#)
 - it::unibo::torsello::bluetoothpositioning::fragment↔
:DeviceDetailInner0Fragment, [63](#)
 - it::unibo::torsello::bluetoothpositioning::fragment↔
:UsbMeasurementFragment, [141](#)
 - it::unibo::torsello::bluetoothpositioning::util::Usb↔
Util, [148](#)
- nameSpaceTextView

- it::unibo::torsello::bluetoothpositioning::adapter::↵
DeviceCardViewAdapter::DeviceViewHolder,
87
- newInstance
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::CameraFragment, 19
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceChartFragment, 48
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailFragment, 56
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailInner0Fragment, 60
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailInner1Fragment, 65
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailInner2Fragment, 70
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailReportFragment, 73
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailResumeFragment, 76
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceListFragment, 79
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::SettingsFragment, 131
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::UsbMeasurementFragment, 140
- noMeasurementsAvailable
 - it::unibo::torsello::bluetoothpositioning::filters::↵
MyArmaRssiFilter, 112
- notifyObservers
 - it::unibo::torsello::bluetoothpositioning::observables↵
::DeviceObservable, 83
 - it::unibo::torsello::bluetoothpositioning::observables↵
::UsbMeasurementObservable, 143
- onActivityCreated
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::CameraFragment, 19
- onAttachFragment
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailInner0Fragment, 60
- onBackPressed
 - it::unibo::torsello::bluetoothpositioning::activities↵
::MainActivity, 107
- onBeaconServiceConnect
 - it::unibo::torsello::bluetoothpositioning::activities↵
::ApplicationActivity, 13
- onBindViewHolder
 - it::unibo::torsello::bluetoothpositioning::adapter::↵
DeviceCardViewAdapter, 43
- onCreate
 - it::unibo::torsello::bluetoothpositioning::activities↵
::ApplicationActivity, 14
 - it::unibo::torsello::bluetoothpositioning::activities↵
::MainActivity, 107
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceChartFragment, 48
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailFragment, 56
- it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailInner0Fragment, 60
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailInner1Fragment, 65
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailInner2Fragment, 70
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailReportFragment, 73
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceListFragment, 79
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::SettingsFragment, 131
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::UsbMeasurementFragment, 140
- onCreateView
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::CameraFragment, 20
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceChartFragment, 48
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailFragment, 57
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailInner0Fragment, 61
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailInner1Fragment, 66
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailInner2Fragment, 71
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailReportFragment, 73
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceDetailResumeFragment, 76
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::DeviceListFragment, 79
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::SettingsFragment, 131
 - it::unibo::torsello::bluetoothpositioning::fragment↵
::UsbMeasurementFragment, 140
- onCreateViewHolder
 - it::unibo::torsello::bluetoothpositioning::adapter::↵
DeviceCardViewAdapter, 44
- onDestroy
 - it::unibo::torsello::bluetoothpositioning::activities↵
::ApplicationActivity, 14
- onLayout
 - it::unibo::torsello::bluetoothpositioning::util::↵
CameraPreviewUtil, 25
- onMeasure
 - it::unibo::torsello::bluetoothpositioning::util::↵
CameraPreviewUtil, 26
- onNavigationItemSelected
 - it::unibo::torsello::bluetoothpositioning::activities↵
::MainActivity, 108
- onNestedScroll
 - it::unibo::torsello::bluetoothpositioning::extra::FA↵
BBehavior, 94
- onNothingSelected
 - it::unibo::torsello::bluetoothpositioning::util::↵
ChartUtil, 33

- onPause
 - it::unibo::torsello::bluetoothpositioning::activities↔
::ApplicationActivity, 15
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::CameraFragment, 20
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceChartFragment, 49
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailFragment, 57
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner0Fragment, 61
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner1Fragment, 66
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner2Fragment, 71
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceListFragment, 79
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::UsbMeasurementFragment, 140
 - it::unibo::torsello::bluetoothpositioning::util:↔
CameraPreviewUtil, 26
 - it::unibo::torsello::bluetoothpositioning::util::Usb↔
Util, 146
- onRecordingReport
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner0Fragment, 63
- onRecordingResume
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner0Fragment, 63
- onRequestPermissionsResult
 - it::unibo::torsello::bluetoothpositioning::activities↔
::MainActivity, 108
- onResume
 - it::unibo::torsello::bluetoothpositioning::activities↔
::ApplicationActivity, 15
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::CameraFragment, 20
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceChartFragment, 49
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner0Fragment, 61
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner1Fragment, 66
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceListFragment, 80
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::UsbMeasurementFragment, 140
 - it::unibo::torsello::bluetoothpositioning::util::Usb↔
Util, 146
- onStartNestedScroll
 - it::unibo::torsello::bluetoothpositioning::extra::FA↔
BBehavior, 94
- onValueSelected
 - it::unibo::torsello::bluetoothpositioning::util:↔
ChartUtil, 34
- plotValue
 - it::unibo::torsello::bluetoothpositioning::util:↔
ChartUtil, 34
- port
 - it::unibo::torsello::bluetoothpositioning::util::Usb↔
Util, 148
- preferences
 - it::unibo::torsello::bluetoothpositioning::activities↔
::ApplicationActivity, 18
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceListFragment, 81
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::SettingsFragment, 134
 - it::unibo::torsello::bluetoothpositioning::util:↔
ReportUtils, 124
- preview
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::CameraFragment, 21
- proximityTextView
 - it::unibo::torsello::bluetoothpositioning::adapter:↔
DeviceCardViewAdapter::DeviceViewHolder,
87
- Q
 - it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilter, 99
 - it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilterBuilder, 101, 102
- R
 - it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilter, 99
 - it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilterBuilder, 101, 102
- REQUEST_CODE_ASK_MULTIPLE_PERMISSIONS
 - it::unibo::torsello::bluetoothpositioning::activities↔
::MainActivity, 109
- rawCallback
 - it::unibo::torsello::bluetoothpositioning::util:↔
CameraPreviewUtil, 29
- rawDistanceEstimated
 - it::unibo::torsello::bluetoothpositioning::distance↔
Estimation::Estimation, 92
- rawValues
 - it::unibo::torsello::bluetoothpositioning::util:↔
ReportUtils, 124
- recentRSSI
 - it::unibo::torsello::bluetoothpositioning::distance↔
Estimation::Estimation, 92
- recentTxPower
 - it::unibo::torsello::bluetoothpositioning::distance↔
Estimation::Estimation, 92
- record
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner0Fragment::OnRecording↔
Report, 115
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner0Fragment::OnRecording↔
Resume, 116
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailReportFragment, 74

- it::unibo::torsello::bluetoothpositioning::fragment↔
 - ::DeviceDetailResumeFragment, 76
- refreshDirectory
 - it::unibo::torsello::bluetoothpositioning::util::↔
 - ReportUtils, 121
- refreshGallery
 - it::unibo::torsello::bluetoothpositioning::task::↔
 - SavImageTask, 126
- replaceFragment
 - it::unibo::torsello::bluetoothpositioning::activities↔
 - ::MainActivity, 109
- ReportUtils
 - it::unibo::torsello::bluetoothpositioning::util::↔
 - ReportUtils, 118
- reportUtils
 - it::unibo::torsello::bluetoothpositioning::fragment↔
 - ::DeviceDetailInner0Fragment, 63
- ReportUtils.java, 153
- resetCamera
 - it::unibo::torsello::bluetoothpositioning::util::↔
 - CameraPreviewUtil, 26
- rssFilterSelected
 - it::unibo::torsello::bluetoothpositioning::activities↔
 - ::ApplicationActivity, 18
 - it::unibo::torsello::bluetoothpositioning::util::↔
 - ReportUtils, 124
- rssTextView
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
 - DeviceCardViewAdapter::DeviceViewHolder, 87
- SETTINGS_PREFERENCES
 - it::unibo::torsello::bluetoothpositioning::constant↔
 - ::SettingConstants, 129
- STRINGS
 - it::unibo::torsello::bluetoothpositioning::fragment↔
 - ::DeviceChartFragment, 51
- savImageChart
 - it::unibo::torsello::bluetoothpositioning::util::↔
 - ChartUtil, 34
- SavImageTask
 - it::unibo::torsello::bluetoothpositioning::task::↔
 - SavImageTask, 126
- SavImageTask.java, 154
- sdf
 - it::unibo::torsello::bluetoothpositioning::util::↔
 - ReportUtils, 124
- setAltBeaconValues
 - it::unibo::torsello::bluetoothpositioning::util::↔
 - ReportUtils, 121
- setArduinoValues
 - it::unibo::torsello::bluetoothpositioning::util::↔
 - ReportUtils, 121
- setArmaOption
 - it::unibo::torsello::bluetoothpositioning::fragment↔
 - ::SettingsFragment, 132
- setArmaOptionsVisible
 - it::unibo::torsello::bluetoothpositioning::activities↔
 - ::ApplicationActivity, 15
- setArmaSpeed
 - it::unibo::torsello::bluetoothpositioning::filters::↔
 - MyArmaRssiFilter, 113
- setAvgOption
 - it::unibo::torsello::bluetoothpositioning::fragment↔
 - ::SettingsFragment, 132
- setAvgOptionsVisible
 - it::unibo::torsello::bluetoothpositioning::activities↔
 - ::ApplicationActivity, 15
- setBeacon
 - it::unibo::torsello::bluetoothpositioning::model::↔
 - Device, 39
- setCamera
 - it::unibo::torsello::bluetoothpositioning::util::↔
 - CameraPreviewUtil, 27
- setChart
 - it::unibo::torsello::bluetoothpositioning::util::↔
 - ChartUtil, 34
- setDistance
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
 - DeviceCardViewAdapter, 44
- setFiltering
 - it::unibo::torsello::bluetoothpositioning::fragment↔
 - ::SettingsFragment, 132
- setInfoDevice
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
 - DeviceCardViewAdapter, 44
- setKalmanFilterSeekBar
 - it::unibo::torsello::bluetoothpositioning::fragment↔
 - ::SettingsFragment, 133
- setMeasurementNoise
 - it::unibo::torsello::bluetoothpositioning::filters↔
 - ::kalmanFilter::KFilter, 98
- setProcessNoise
 - it::unibo::torsello::bluetoothpositioning::filters↔
 - ::kalmanFilter::KFilter, 98
- setRawValues
 - it::unibo::torsello::bluetoothpositioning::util::↔
 - ReportUtils, 122
- setRssiFilter
 - it::unibo::torsello::bluetoothpositioning::activities↔
 - ::ApplicationActivity, 16
- setSettingsVisible
 - it::unibo::torsello::bluetoothpositioning::activities↔
 - ::ApplicationActivity, 17
- setSorting
 - it::unibo::torsello::bluetoothpositioning::fragment↔
 - ::SettingsFragment, 133
- setkFilterValues
 - it::unibo::torsello::bluetoothpositioning::util::↔
 - ReportUtils, 121
- SettingConstants.java, 154
- SettingsFragment.java, 154
- shutterCallback
 - it::unibo::torsello::bluetoothpositioning::util::↔
 - CameraPreviewUtil, 29
- standardRawDistanceTextView

- it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter::DeviceViewHolder,
87
- startIoManager
 - it::unibo::torsello::bluetoothpositioning::util::Usb↔
Util, 147
- StatePagerAdapter
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
StatePagerAdapter, 137
- StatePagerAdapter.java, 154
- stopIoManager
 - it::unibo::torsello::bluetoothpositioning::util::Usb↔
Util, 147
- stringArrayList
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceChartFragment, 51
- surfaceChanged
 - it::unibo::torsello::bluetoothpositioning::util::↔
CameraPreviewUtil, 27
- surfaceCreated
 - it::unibo::torsello::bluetoothpositioning::util::↔
CameraPreviewUtil, 27
- surfaceDestroyed
 - it::unibo::torsello::bluetoothpositioning::util::↔
CameraPreviewUtil, 28
- takePicture
 - it::unibo::torsello::bluetoothpositioning::util::↔
CameraPreviewUtil, 28
- textView
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailReportFragment, 74
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailResumeFragment, 77
- thread
 - it::unibo::torsello::bluetoothpositioning::util::↔
ChartUtil, 35
- twDistance
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::UsbMeasurementFragment, 141
- twState
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::UsbMeasurementFragment, 141
- txPowerTextView
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter::DeviceViewHolder,
87
- USB_MEASUREMENT_FRAGMENT
 - it::unibo::torsello::bluetoothpositioning::activities↔
::MainActivity, 110
- update
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceChartFragment, 49
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner0Fragment, 62
 - it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceDetailInner1Fragment, 67
- it::unibo::torsello::bluetoothpositioning::fragment↔
::DeviceListFragment, 80
- it::unibo::torsello::bluetoothpositioning::fragment↔
::UsbMeasurementFragment, 140
- updateDataSet
 - it::unibo::torsello::bluetoothpositioning::util::↔
ChartUtil, 35
- updateDistance
 - it::unibo::torsello::bluetoothpositioning::distance↔
Estimation::Estimation, 91
 - it::unibo::torsello::bluetoothpositioning::model::↔
Device, 39
- UsbMeasurementFragment.java, 154
- UsbMeasurementObservable
 - it::unibo::torsello::bluetoothpositioning::observables↔
::UsbMeasurementObservable, 143
- UsbMeasurementObservable.java, 155
- UsbUtil
 - it::unibo::torsello::bluetoothpositioning::util::Usb↔
Util, 145
- usbUtil
 - it::unibo::torsello::bluetoothpositioning::activities↔
::ApplicationActivity, 18
- UsbUtil.java, 155
- uuidTextView
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter::DeviceViewHolder,
87
- view
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter::DeviceViewHolder,
87
- visibilityNameSpaceLinearLayout
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter::DeviceViewHolder,
88
- visibilityUuiDLinearLayout
 - it::unibo::torsello::bluetoothpositioning::adapter::↔
DeviceCardViewAdapter::DeviceViewHolder,
88
- WINDOW
 - it::unibo::torsello::bluetoothpositioning::constant↔
::KFilterConstants, 104
- WOSC
 - it::unibo::torsello::bluetoothpositioning::distance↔
Estimation::Estimation, 92
- writeJsonFile
 - it::unibo::torsello::bluetoothpositioning::util::↔
ReportUtils, 122
- x
 - it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilter, 99
- x1
 - it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilter, 99
- x2

it::unibo::torsello::bluetoothpositioning::filters↔
::kalmanFilter::KFilter, [99](#)