

# Tactile feedback

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## Description

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Tactile feedback refers to intentionally produced feedback that is perceived as movement. In most cases this movement is perceived with the touch sense on the skin. Another widely used term is Haptic technology, details from [Wikipedia](#).

## Where is it used

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### To assist other senses

There are several possibilities for providing tactile feedback. One interesting example is the use of a Braille output device, that traces text as embossed groups of dots that can be read using the tips of your fingers. There are some quite innovative applications, like [Braille Pad](#) of this in the market. They are, of course aimed at people with sight problems, but could be used by anyone.

### In games

One very common way is to use vibration to give the user feedback in a game or other application to enhance the user experience. For example, when you shoot in a game, your game controller jerks or vibrates suddenly to give the impression of recoil. Or in a racing game the steering wheel or game controller vibrates when you go off road to simulate a bumpy ride.

### Silent alarm

In mobile devices it is usual, that you can set a *silent mode*, where the device does not emit a sound, but uses rhythmic vibration to tell the user needs to take an action. Usually an alarm or an incoming message or phone call. In such cases the device also blinks to notify the user of an event on which they should take some action.

## How does it work

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The Braille pad example above uses retractable pins to create the Braille patterns. Most of the Nokia mobile devices have a small eccentric rotator that creates vibration when turning at high speeds.

There are several examples around the web on how to use the vibration functionality, please use a search engine to find them out.

On Nokia Developer Wiki there are articles for :-

#### Flash Lite

[Using Vibration to give user feedback in Flash Lite](#)

#### Symbian C++

[Archived:Vibration Control API on Symbian](#)

[Monitoring Tactile Feedback Vibration Mode](#)

#### J2ME

[Archived:Using backlight and vibration in Java on S60 2nd Edition \(Known Issue\)](#)

## Code examples

*Flash Lite ActionScript*

```
//add code here
```

Your sample .h file looks like this :-

```
#include <HWRMVibra.h>

class CYourClass : public CBase, public MHWRMVibraObserver
{
public:
    void StartVibrate();
    void StopVibrate();
    virtual void VibraModeChanged(CHWRMVibra::TVibraModeState aStatus);
    virtual void VibraStatusChanged(CHWRMVibra::TVibraStatus aStatus);

private:
    CHWRMVibra* iVibrate;
};
```

The sample cpp file looks like this :-

```
void CYourClass::StartVibrate()
{
    CHWRMVibra::TVibraModeState vibrationState = iVibrate->VibraSettings();

    if (vibrationState == CHWRMVibra::EVibraModeON)
    {
        TRAPD(leaveError, iVibrate->StartVibraL(2000)); //time you want to vibrate the device
    }
}

void CYourClass::VibraStatusChanged(CHWRMVibra::TVibraStatus aStatus)
{
    //Blank implementation to avoid class abstraction
}

void CYourClass::VibraModeChanged(CHWRMVibra::TVibraModeState aStatus)
{
    //Blank implementation to avoid class abstraction
}

void CYourClass::ConstructL()
{
    iVibrate = CHWRMVibra::NewL(this); // Pass a reference of your class to get
    callbacks
}
```

The class CHWRMVibra links against HWRMVibraClient.lib, so add the following line to your mmp file

```
LIBRARY HWRMVibraClient.lib
```

```
//add code here
```

*Python*

```
#add code here
```

## Why is it used

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### Practical reasons

Tactile feedback is good for those times when auditive or visual feedback is unavailable or cannot be used for some other reason. The user might be visually impaired or have problems in hearing, either permanently like bad lighting or heavy background noise or permanently like in cases of blindness or deafness. In theses cases tactile feedback is the best option for practical applications.

### Enhanced user experience

Since most people live in a world of sound, light and touch, using tactile feedback in games and other applications gives a highly elevated experience and creates a wow effect for the user. Furthermore, in some cases, like the touch screen it is possible that tapping on a button does not immediately result in the UI, so it is a good idea to give the user some feedback trough vibration so they know the tap was registered.

## Links

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[Haptic technology](#)

[Article about Nokia tactile feedback on Redferret](#)

[Braille pad](#)

## Please give feedback

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Please use the Comment tab to give feedback to the author and ask for more focusing certain aspects of the tactile feedback issue.

