



Vector Platform

Revision 1.0

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1 Vector Platform

1.1 Introduction

Vector graphics is based on concept of resolution independence, and a raster image is based on pixels. So a raster image with a resolution of 320 X 240, if needed to be displayed on 640 X 480 screen size, it has to be scaled, that is every pixel has to be repeated. This results in loss of quality of the image. Since elements in a vector graphics is represented as discrete lines and curves, these can be scaled to any level without loss of quality.

Software in all hand held devices has two major blocks, the protocol stack and the MMI. The protocol stack takes care of the communication part and the MMI takes care of the human interaction with the devices, the protocol stack and MMI are independent of each other, the communication between the two blocks is held by an adaptation layer which maps each protocol layer signal to MMI layer signals.

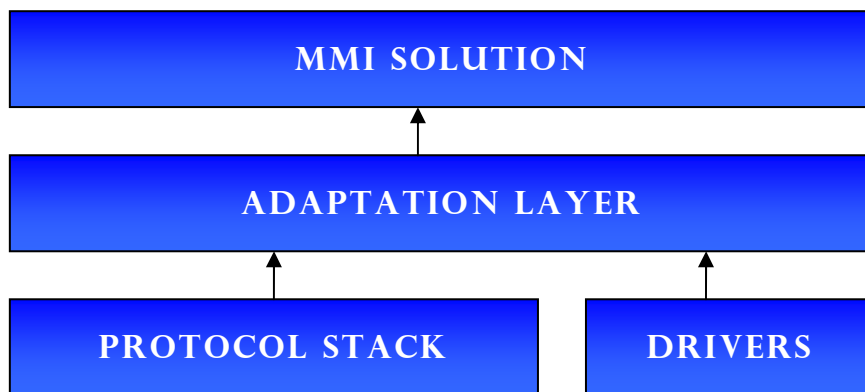


Figure 1-1

All MMI solutions available on the handheld devices in market today are raster based, that is everything that is displayed is a bitmap, which are drawn on to the LCD. As the resolution of the handset devices change, the whole MMI changes, the protocol stack remains the same.

2 Cewidus' Idea

Cewidus' idea is to develop a vector graphics based MMI solution. The UI is based on the open format SVG and the SVG rendering engine is based on OpenVG for graphics acceleration. Since there is always an adaptation layer on any platform, the MMI solution can be fitted on to any existing platform available in market today, with changes to the adaptation layer.

2.1 Advantages of Vector MMI solution

Irrespective of any resolution the **Vector MMI** solution will always remain the same. So, no change in MMI is required when moving from one resolution to other.

2.1.1 What this solution means to Handset Manufacturers

Handset manufacturers release handsets with different resolutions like 80X160, 180 X 240, 240X 320, and 600 X 400. In all the handset models the protocol stack is the same but only the MMI solution changes and with addition of new features. With prices of LCD coming down, the Handset Manufacturer has to redo the whole MMI solution for every new resolution that hits the market. With The **Vector MMI** solution no redoing of MMI is required; one solution will fit to any resolution. This solution will help the handset manufacturer cut cost on redoing MMI and reduce time to market.

2.1.2 What this solution means to GPU Manufacturers

GPU Manufacturers target mainly the gaming industry, the Mobile gaming industry is very small, and very few mobile phones come out supporting 3D Games. But every device that comes out has a MMI solution, Sustaining displays at high resolution requires graphics acceleration, so GPU manufacturers can target the MMI solution with their GPUs, and the vector platform which is a big market.

2.1.3 What this solution means to End user

In all the available handset in Market the UI is always static and not customizable, with the vector platform the UI can be made customizable. The vector platform is based on an SVG rendering Engine; the SVG is open format, so any UI developed based on SVG format will be rendered. So the user can download and change the UI when he requires.

2.1.4 What this solution means to Service providers

With UI based on open standard SVG and customizable in the Vector Platform, the service providers can sell interactive contents through their vector platform, there by generating revenues for the service provider.

2.2 Cons of Vector MMI solution

To render vector files (SVG) at high resolution requires the use of GPU; otherwise the required frame rate may not be achieved.