Each vendor appears to have its own definition of enterprise FMC, but all their products consist of one or more of the following capabilities:

### **Session redirection**

Session redirection means moving a call in progress from a cell phone to a desk phone or vice versa, in much the same way as a call can transfer from one extension to another. For example, one is in a car on the way to work, listening to a conference call on a cell phone. One walks into the office, sits down, and redirects the call (session) to a desk phone. Depending on the implementation, control of the process might be from a cell phone, a desk phone or a PC, using touch-tones or something more user-friendly.

### **PBX mobility**

This is what the Avaya press release terms “extension to cellular,” and some other vendors term “PBX extension.” The cell phone number is entered into the PBX (or third party PBX mobility device, see the paragraph below headed “PBX agnostic”), and then when someone calls the related office number, the PBX dials a cell phone over the PSTN and bridges the call. The PBX treats the cell phone as if it is an analog extension, so PBX can invoke features like hold and transfer by touch-tone commands. Thus, one can use any cell phone and any carrier (see the paragraphs below headed “handset agnostic” and “carrier agnostic”).

Treating the mobile phone as an analog extension to the PBX opens up several more possibilities. Various flavors of this service might include features like single number, simultaneous ringing and single voicemail.

#### **Single number**

Single number means that the mobile phone and the desk phone share an extension number. So only one phone number need be given out to receive calls on either a mobile or desk phone. But the cell phone likely still has its own number, it’s just that one need not give it out to anyone. To make business calls from a cell phone, one dials an access number at the office, gets a new dial tone, and then dials the destination number. This allows taking advantage of corporate least-cost-routing, and shows the office number on the caller ID display of the called person.

#### **Single voicemail**

Single voicemail is the option to use the corporate voice mail rather than the cell phone’s voice mail. This only works on calls made to an office number.

#### **Simultaneous ringing**

Simultaneous ringing means that when someone calls an office number, a desk phone and a mobile phone ring simultaneously.

When a cell phone receives a call made to an office number, the caller ID display would normally show the office as the caller, since the call is routed though the PBX. When the client software on the cell phone can pre-empt the built-in phone software (depends on the handset and client software vendor) this caller ID is suppressed and the mobility controller passes the correct calling number and name to the client software on the handset using the cellular data channel. Alternatively, depending on the PBX and carrier, the system may be able to insert the caller ID of the person calling into the regular caller ID notification (caller ID spoofing). This will show the 'correct' caller ID even on the built-in handset interface.

### **Client software**

PBX mobility on a regular cell phone is not particularly user friendly, what with the touch-tone interface and the access number prefixing. With a smartphone things get a lot better. The definition of a smartphone is that it can run third-party software. If one has a smartphone, and it is a model supported by an enterprise FMC system, it will be able to run a “client application” that puts a friendly user interface on the PBX mobility features, allowing easy use of PBX features like four-digit dialing to other extensions.

If the phone supports it, well written client applications can fully hide the native phone user interface. Otherwise users will have two different screens from which to dial calls: the built-in one and the client application.

RIM has built PBX signaling features into its handsets running firmware version 4.2.1 or above. Thus, Blackberries can access PBX features through menus rather than touch-tones, even without add-on client software.

OptiCaller software has developed mobile PBX software/apps for most smartphone platforms (Android, iPhone, Blackberry, Windows Mobile and Windows Phone), which also fits to any PBX and Centrex systems.

### **Dual-mode support**

A dual-mode phone is a cell phone that also has [Wi-Fi](https://en.wikipedia.org/wiki/Wi-Fi). The Wi-Fi can be for data only, voice only, or for both.

Three main categories of wireless extensions to PBXs exist: those that work over Wi-Fi (VoWLAN, or VoWi-Fi), those that use public mobile networks like 3G, and those that use other radio technologies like DECT. Client software can make a dual-mode smartphone act as a Wi-Fi extension to the PBX. This gives the handset a split personality: a regular cell phone and a VoIP PBX extension, each having its own phone number. These two personalities can be well integrated, fully separate or something in between. Session redirection as described above moves the call between devices; with a dual-mode phone, session redirection can occur between the two networks, keeping the call on the same handset.

Well integrated dual-mode user interfaces are sometimes described as “network agnostic” (see below).

### **Session continuity**

Dual-mode handset clients can fully hide their split personality, taking the onus of session redirection off the user, and handling it automatically. When the system senses that a phone moves into Wi-Fi coverage, it transfers the call onto the VoWi-Fi side. When a phone moves out of Wi-Fi coverage, it transfers the call onto the cellular side. This is also sometimes termed “seamless handover” or “automatic handover.” To do it imperceptibly to the user is technically challenging. This automatic, seamless type of session redirection is often termed voice call continuity (VCC). The term VCC has the disadvantage that it specifically mentions voice, while FMC systems are evolving toward multimedia sessions where voice is only one of the elements. So a better term might be session continuity.

Session continuity needs client software support in the handset, either with built-in VCC client software, or (more commonly in enterprise FMC) as a part of the client software from the enterprise FMC system vendor.

### **Mobility controller**

VCC is a term lifted from the IP multimedia subsystem (IMS) specifications[[6]](https://en.wikipedia.org/wiki/Fixed%E2%80%93mobile_convergence#cite_note-6) published by the international bodies involved with standardizing cellular technologies. In IMS terminology, VCC is done by software termed the call continuity control function (CCCF).

Session redirection and session continuity need a device in the network that routes and reroutes the call over either the fixed or mobile network as needed; something that embodies the CCCF. Many terms for this device exist, and each of these terms can also mean something else. Also the various devices that incorporate session redirection or session continuity usually also do other things. These devices have names like “mobility server,” “mobility controller,” “mobility router,” “mobility appliance” or “mobility gateway.”