

Special Article on Common Platform Technology for Mobile Terminals

The i-mode and the Third-Generation terminal, FOMA, demonstrate that the mobile terminal is in evolution and that service is expanding into business areas such as 'daily life infrastructure' that differ from mobile communication as we have seen it so far. This phenomenon reflects the rapidly increasing expectations that customers have for mobile terminals and technological development must respond to those expectations.

On the other hand, the software and hardware technology for implementing the mobile terminal is advancing and growing in complexity, and technical innovation in R&D of mobile terminals and the capabilities of those terminals are becoming more important than had previously been assumed. The scale of software development, for example, is now greater than that for network node equipment, and the software requires the cutting edge CPU chips. The Operating System (OS) and communication protocols are also important fundamental technical elements that support service quality. It is therefore important to construct networks that are specific to mobile communication, and to develop hardware and communication protocols for efficient cooperation and division of duties with the network based on the requirements of mobile terminals. In developing the various kinds of middleware that serve as the platform for service provision and the service-specific application software as well, it has also become important to incorporate Internet technology.

The Second-Generation PDC system was developed on the basis of fundamental technology that was specific to each implemented function. Because of the changing environment described above, however, how high-quality, low-cost mobile terminals can be developed efficiently and in a short time has been an issue in recent years. To address that issue, DoCoMo has taken up the challenge of creating a common platform for both software and hardware. Concerning software, the platform provides a system of modules and a structure that is available to both mobile terminal vendors and software vendors and can be used for efficient development. Concerning hardware, the platform makes possible the introduction of an LSI that is common to all mobile terminal vendors, and integrates a baseband processor and an application processor, thus providing advantages in development efficiency and production cost. The common platform thus promotes a innovation of the conventional approach to development and existing structure so as to reduce the scale of development, improve quality and also reduce costs.

This article introduces the development of such a common platform by DoCoMo. A successful common platform for mobile terminals will improve development efficiency and product quality, thus make it possible to provide attractive mobile terminals in a timely manner. It can also be expected to lower mobile terminal prices.

Koji Chiba

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