Chapter 7

features without actually using an OS or a kernel. In addition to system services, a set of device drivers also works to control the peripherals. Figure 7.18 shows the basic services that are available with the Blackfin VisualDSP++ tool chain.

Of those shown, the interrupt service and external memory and power management services are typically initialization services that configure the device or change operating parameters. On the other hand, the DMA and Callback Managers both provide ways to manage system flow.

As part of the DMA services, you can move data via a standard API, without having to configure every control register manually. A manager is also provided that accepts DMA work requests. These requests are handled in the order they are received by application software. The DMA Manager simplifies a programming model by abstracting data transfers.

In Chapter 4, we discussed the importance of handling interrupts efficiently. The Interrupt Manager allows the processor to service interrupts quickly. The idea is that the processor leaves the higher-priority interrupt and spawns an interrupt at the lowest priority level. The higher-priority interrupt is serviced, and the lower-priority interrupt is generated via a software instruction. Once this happens, new interrupts are no longer held off.