Design Document for eDMA

1　Outline

This document describes the eDMA driver in Linux kernel of MVF TOWER BOARD (XTWR-VF600) with MVF SoC.

2　Existing code to be changed

2.1　Source

■　eDMA driver
Modelo BSP
drivers/dma/mcf_edma.c edma_test.c
arch/m68k/include/asm/mcf_edma.h

2.2　Modification

■　eDMA driver
arch/arm/include/asm/mvf_edma.h

1. Based on arch/m68k/include/asm/mcf_edma.h, change register address to the one with offset definition that can be used after ioremap.

drivers/dma/mvf_edma.c()

1. Based on drivers/dma/mcf_edma.c, port eDMA driver.
2. The mcf_edma.c driver is treated as somewhat like independent local library in Modelo BSP. However for this porting, it is considered to be a DMA driver connecting to linux DMA subsystem (DMAengine.c).
Reimplement code of each DMA function that export_symbol is done in mcf_edma.c to fit struct dma_device (include/linux/dmaengine.h).

3　API of new functions

No additional new API since it is ported to adapt DMA subsystem.

4　Expected register settings

According to the manual, develop the driver as below.
eDMA base address: 0x4001 8000(DMA0)　0x4009 8000(DMA1)

5 Expected functionality and usage

DMA driver, as it is incorporated in DMA subsystem, becomes usable by the method defined in kernel/documentation/DMA-API.txt.

6 Any other pertinent information

None