MACRONIX

PowerManage Introduction

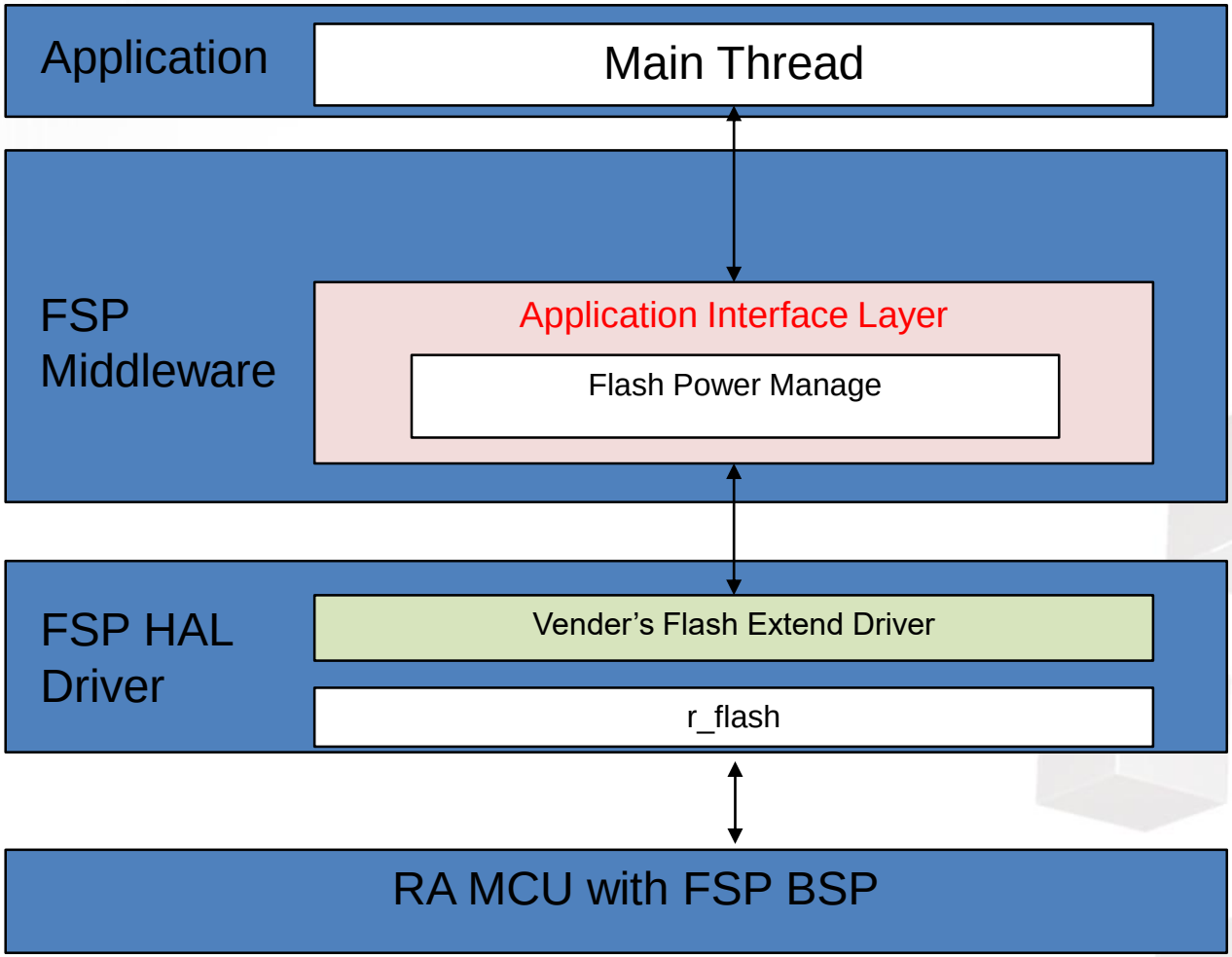
2023.4

Introduction

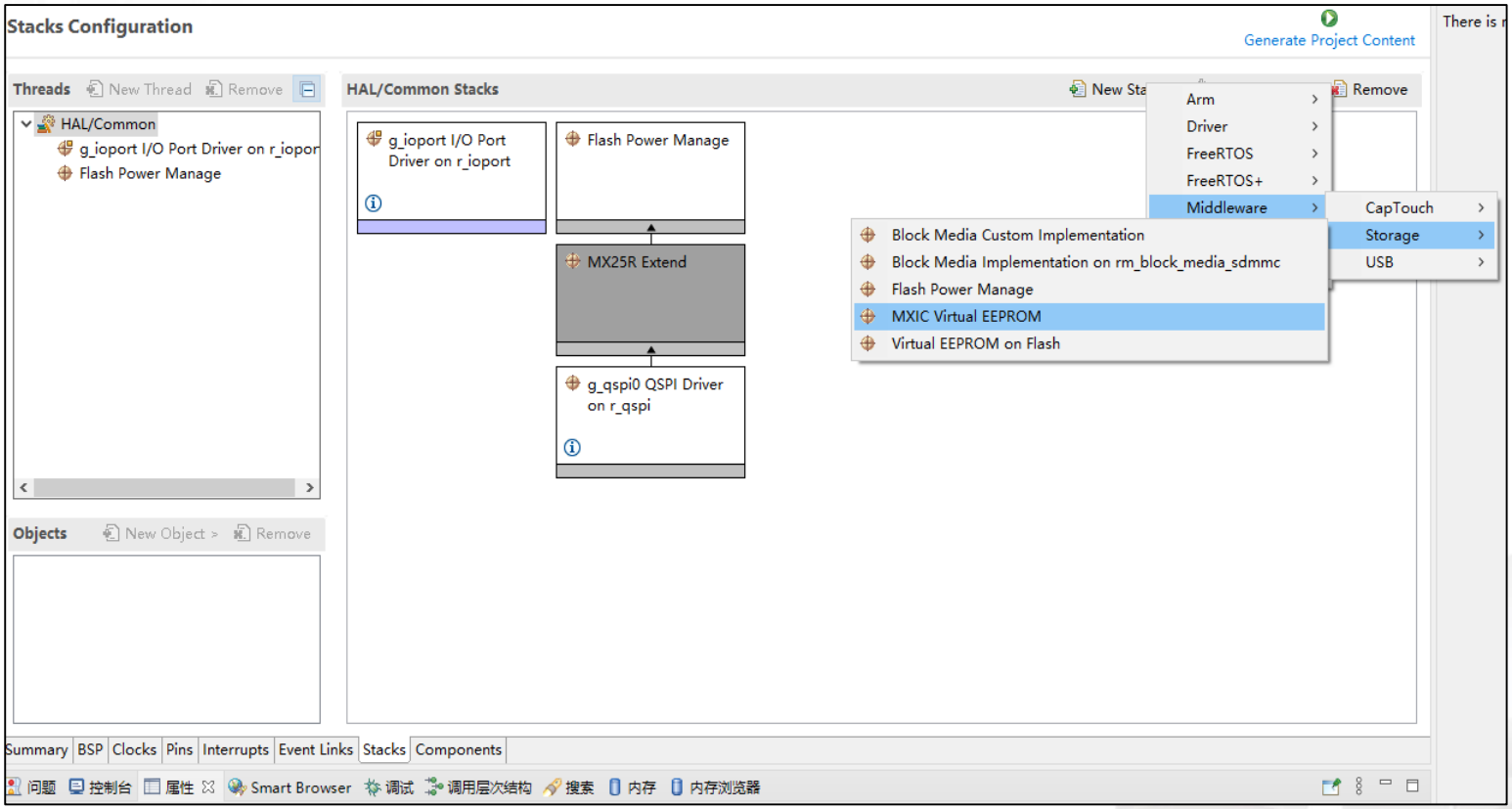
Usually, Nor Flash has more than one power mode, such as Normal mode and DeepPowerDown, but in FSP, it is not very easy to change Flash power mode, In this application, we introduce a middleware to manage Flash Power mode, and take MX25R as an example for interpretation. The Power Manage Middleware just offers some interfaces and the Flash vender should realize the interfaces according to related rules.

PowerManage Middleware will continue to exist as the FSP is updated.

PowerManage Layer



PowerManage Module

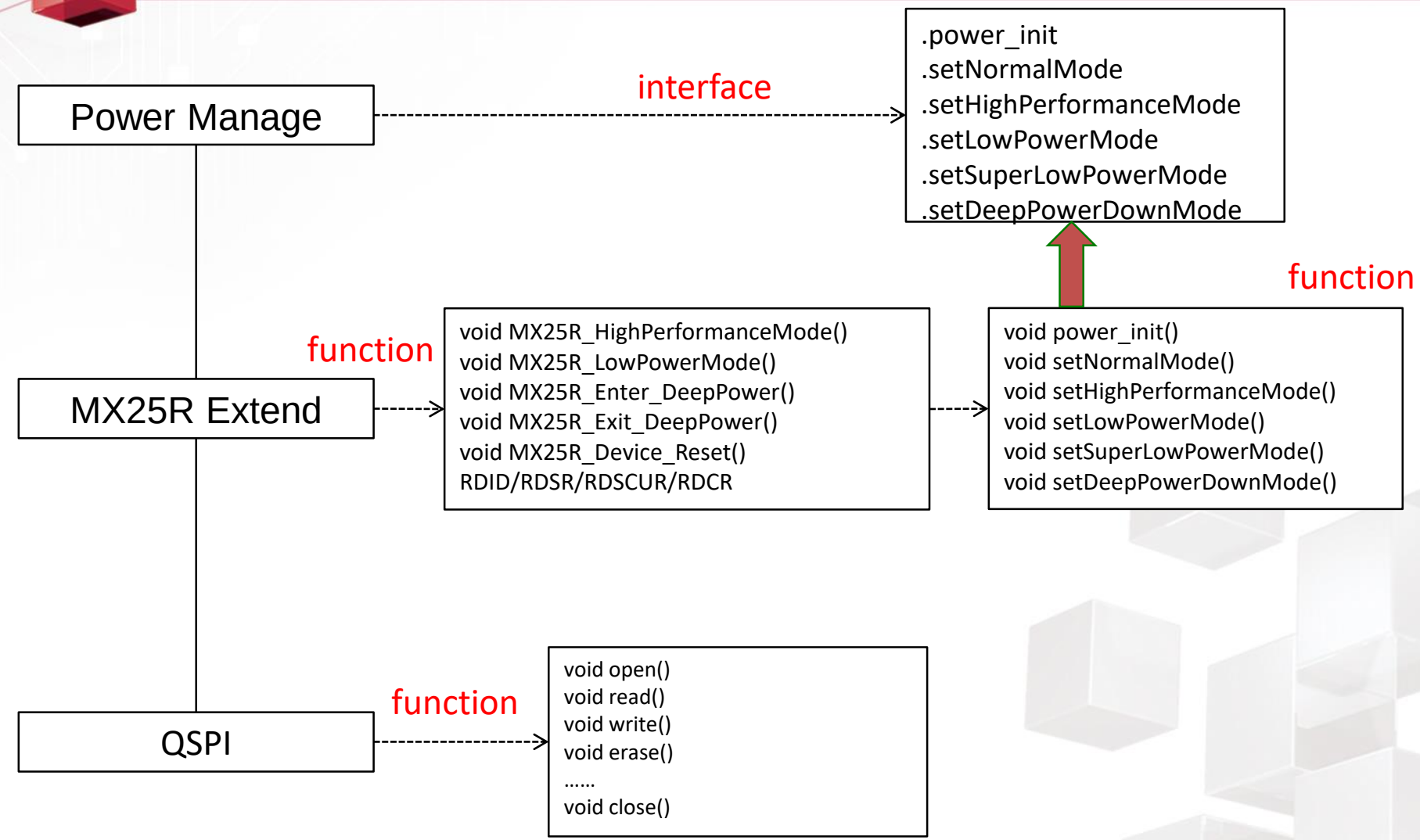


Interface Rules

- power_init ()
- setNormalMode ()
- setHighPerformanceMode ()
- setLowPowerMode ()
- setSuperLowPowerMode ()
- setDeepPowerDownMode ()

Each vender should realize the interfaces above. power_init() is used to do some initialization work, and then vender should select some power mode according to actual Flash. Finally, the other power should return NOT_SUPPORT.

Example


Power Manage
interface
.power_init
.setNormalMode
.setHighPerformanceMode
.setLowPowerMode
.setSuperLowPowerMode
.setDeepPowerDownMode
function
MX25R Extend
function
void MX25R_HighPerformanceMode()
void MX25R_LowPowerMode()
void MX25R_Enter_DeepPower()
void MX25R_Exit_DeepPower()
void MX25R_Device_Reset()
RDID/RDSR/RDSCUR/RDCR
void power_init()
void setNormalMode()
void setHighPerformanceMode()
void setLowPowerMode()
void setSuperLowPowerMode()
void setDeepPowerDownMode()
QSPI
function
void open()
void read()
void write()
void erase()
……
void close()

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