

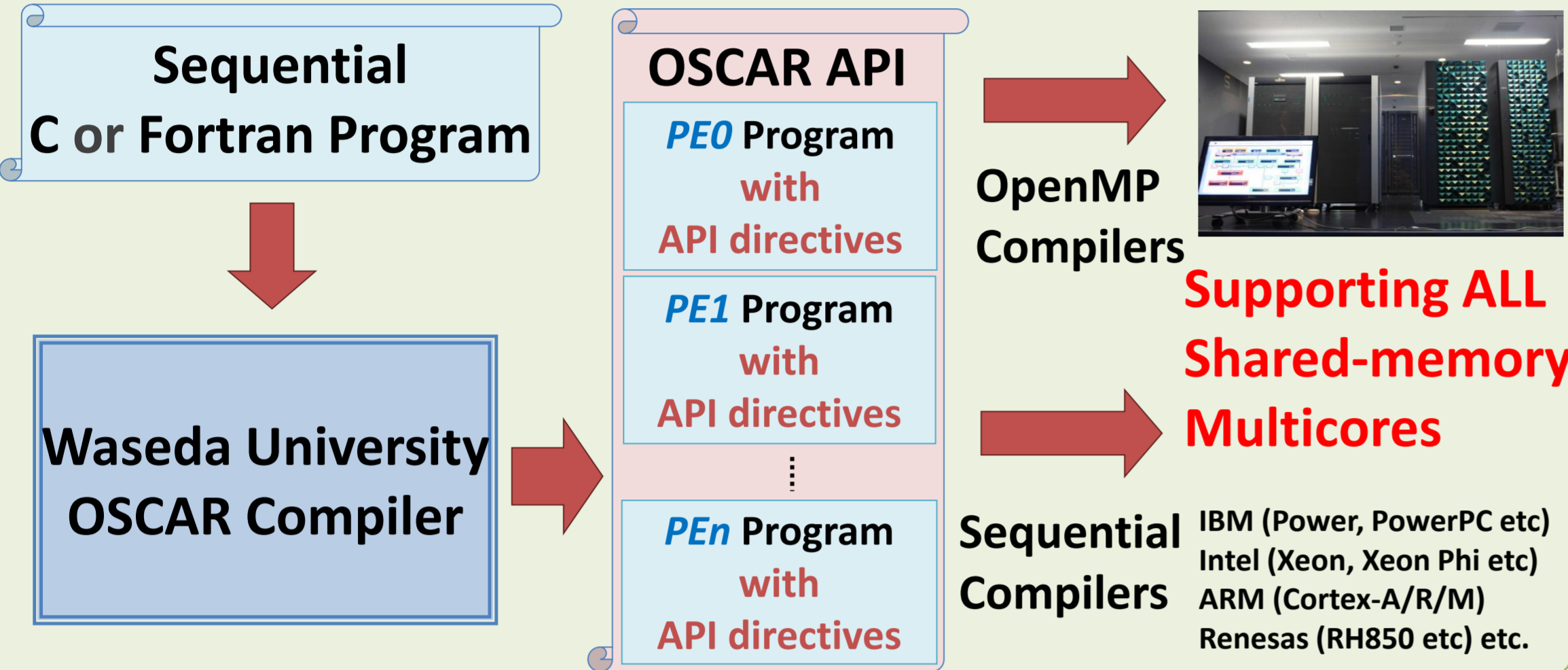
OSCAR Parallelizing & Power Reducing Compiler

Automatic Parallelized and **Automatic Power Reduced**
Software for Embedded to HPC Programs on Multicores

<Application>

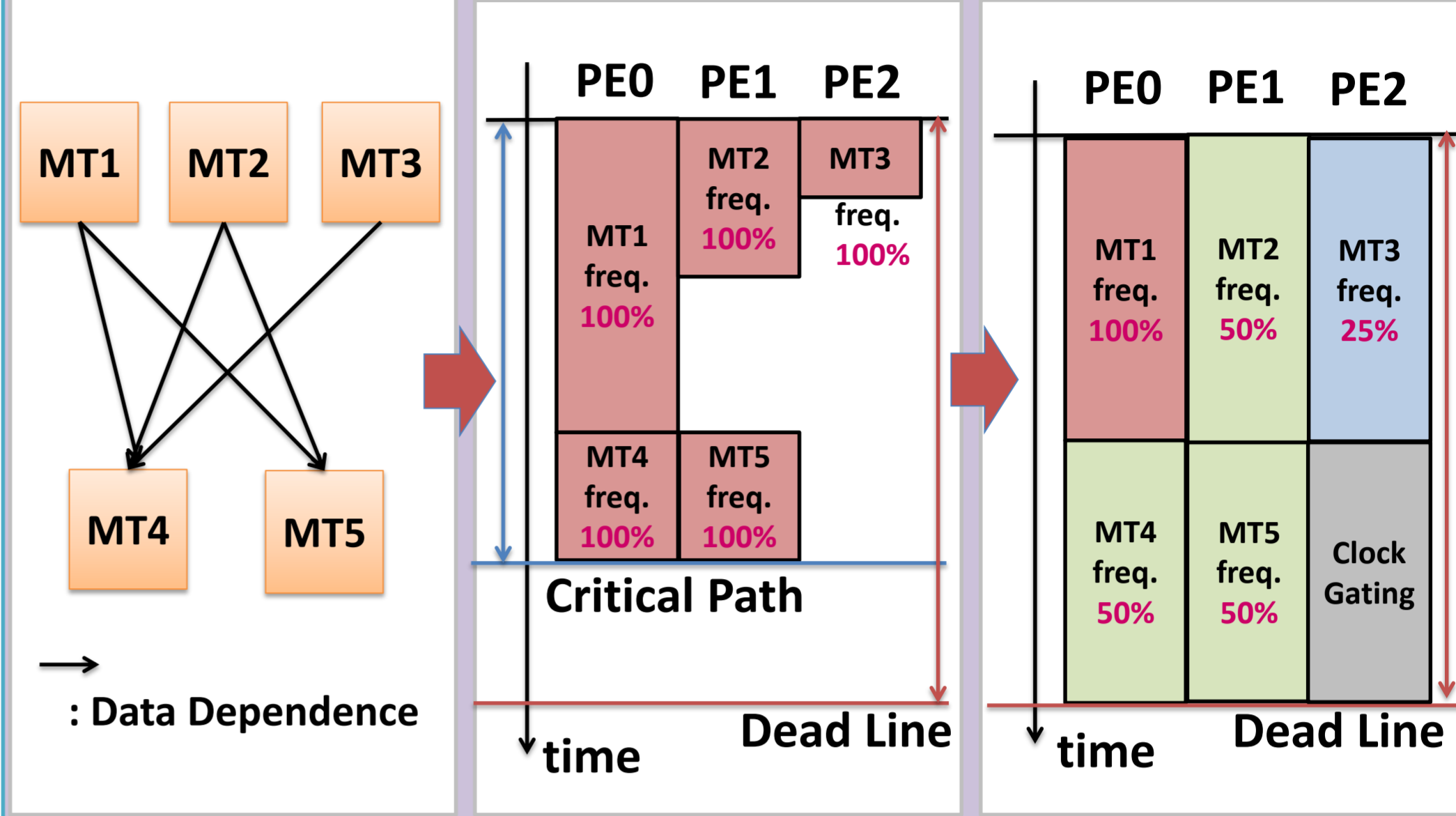
Automobile, Medical, Image Processing, Scientific HPC

Multi-Platform Support (IBM, Intel, ARM, Renesas, etc.)



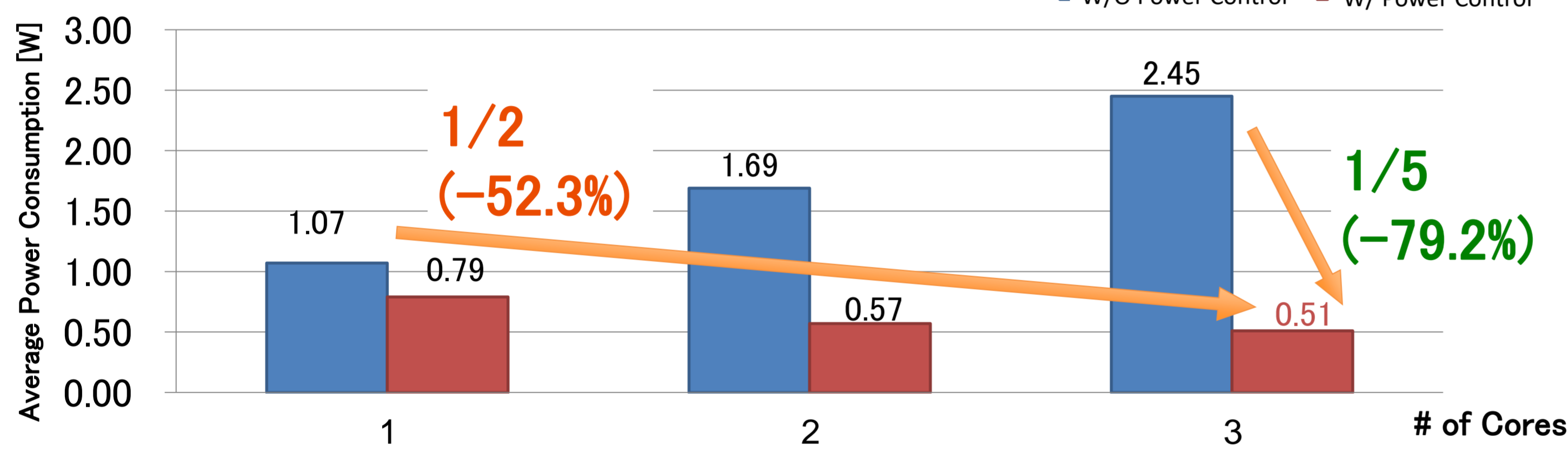
Saving Energy by Compiler

Parallelization → Power Reduction

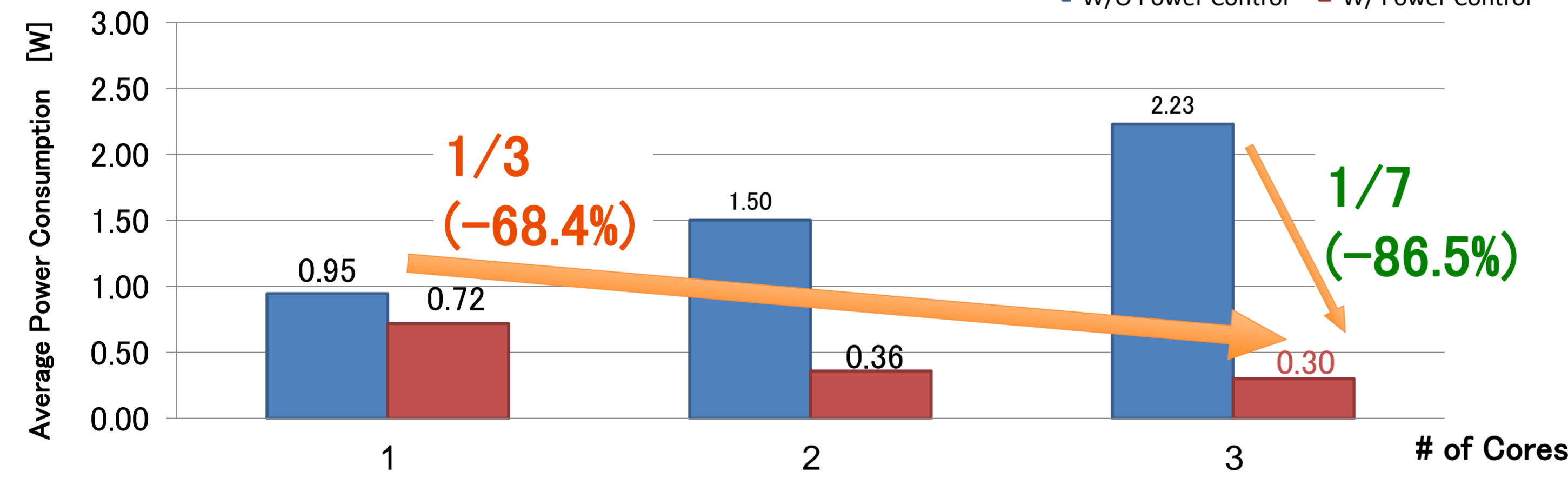


Power reduction on ARM Cortex-A

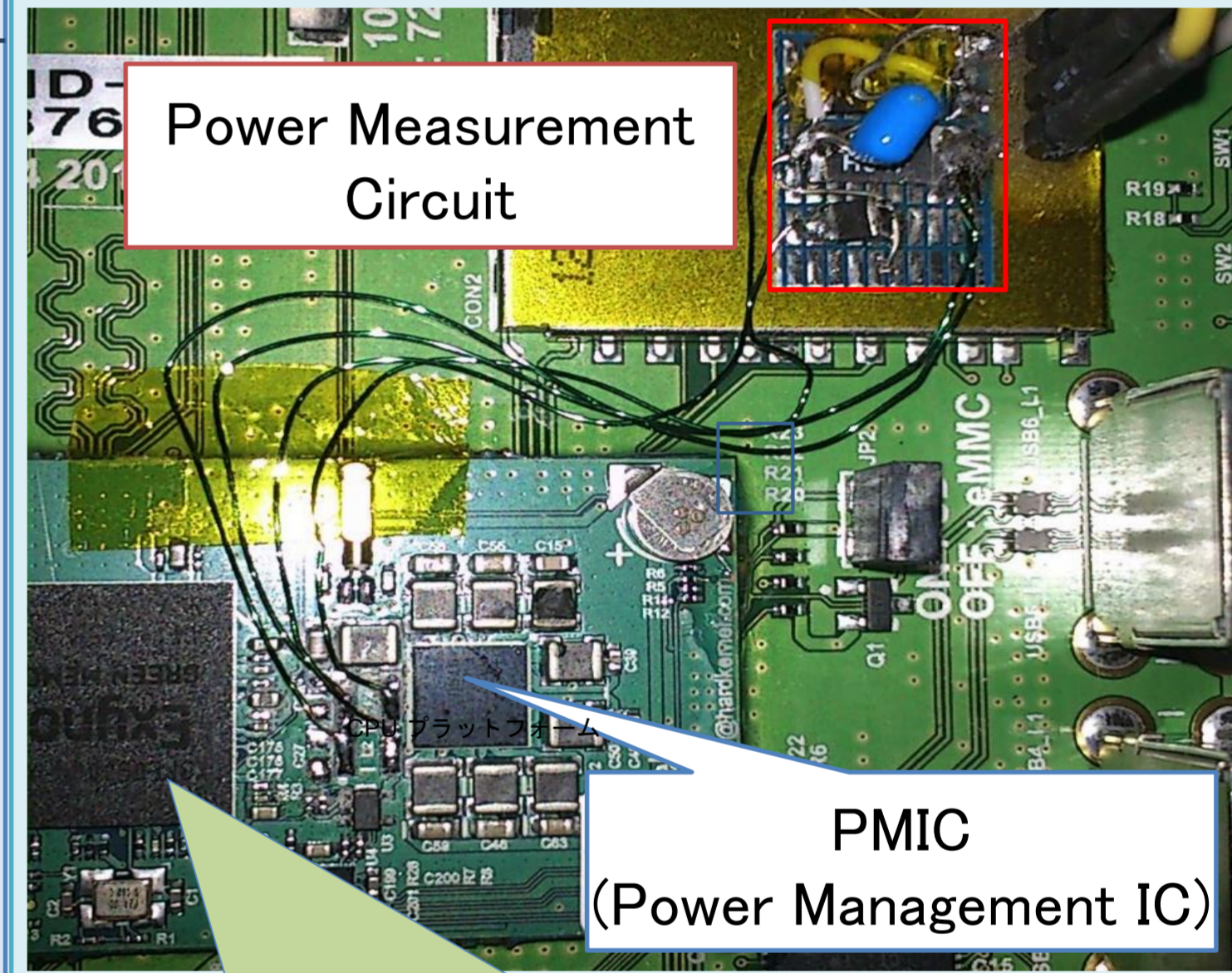
Power Consumption of H.264 Decoder



Power Consumption of Optical Flow



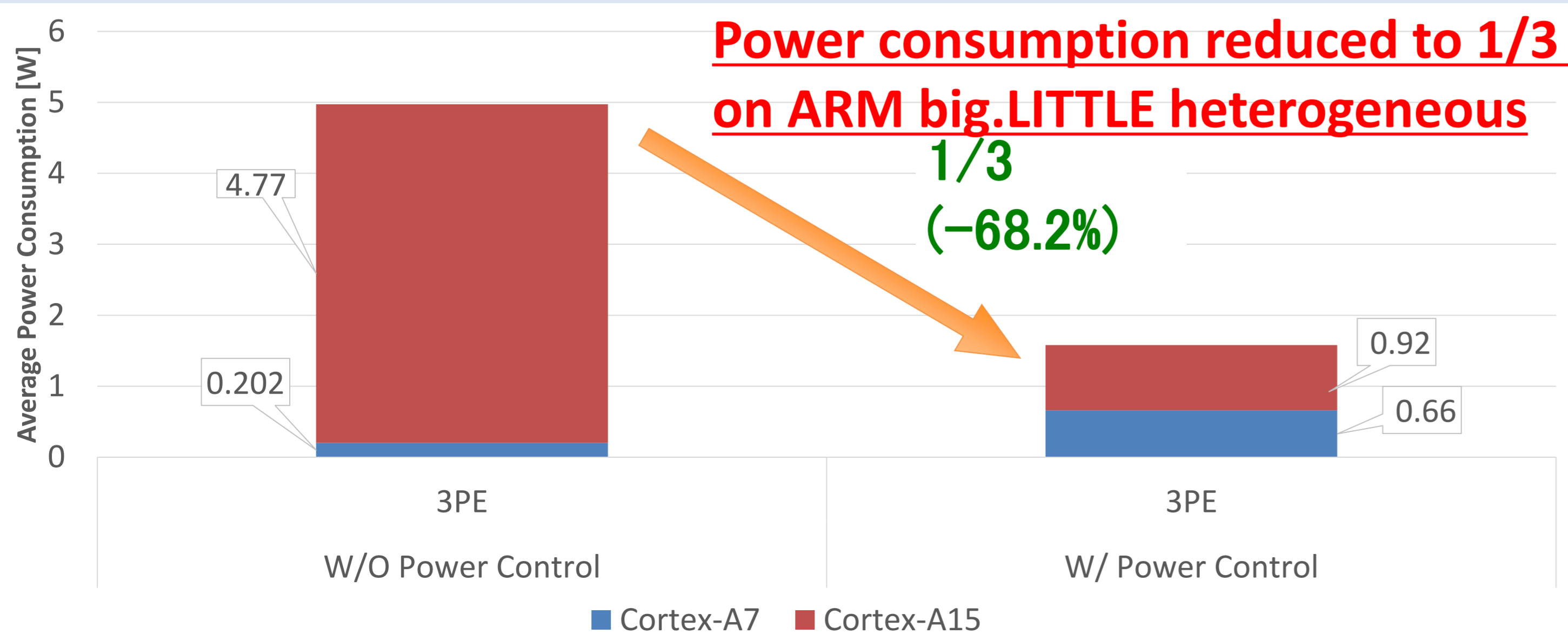
Evaluation Environment : ODROID-X2 (ARM 4 cores)



CPU Exynos 4412 Application Processor

Cortex-A9 32KB I/D\$ NEON	Cortex-A9 32KB I/D\$ NEON
Cortex-A9 32KB I/D\$ NEON	Cortex-A9 32KB I/D\$ NEON
IMB L2\$ VFPv3	
DMC + LPDDR2 RAM 16Gbit (PoP)	

Power reduction on ARM big.LITTLE



Evaluation Environment : ODROID-XU3 (ARM big.LITTLE 4 cores)

CPU Exynos 5422 Application Processor

Cortex-A15 32KB I/D\$ NEONv2	Cortex-A15 32KB I/D\$ v2NEON	Cortex-A7 32KB I/D\$ NEONv2	Cortex-A7 32KB I/D\$ v2NEON
Cortex-A15 32KB I/D\$ NEONv2	Cortex-A15 32KB I/D\$ NEONv2	Cortex-A7 32KB I/D\$ NEONv2	Cortex-A7 32KB I/D\$ NEONv2
2MB L2\$ with ECC		512KB L2\$	
LPDDR3 RAM 2GB (PoP)			

OpenCV Facedetect (using haar Cascades)

