Research Theme

Variable Block Size Motion Estimation

Large Frame Size Video Sequence

- HDTV 720p

Hardware Architecture of IME

- Mode Reduction impact
- High Speed Impact
- Adder Tree Improvement

Existing Structures

Broadcast Each Pixel to 1x16 PE's

Sixteen 4x4 SADs

Eight 8x4 and Eight 4x8 SADs

Four 8x8 SADs

Two 16x8 SADs and Two 8x16 SADs

One 16x16 SAD

Under frequencies ranging from 100 to 200MHz, MR-PPSAD structure also outperforms SAD Tree when multiple sets of PE array is considered

Optimized Structure & Hardware Cost Comparison