

## 1. Answer the following questions:

### (a) List two changes in the Cortex-A72 that improve performance.

- a. On the level of the instruction fetch block we see **a brand new branch-predictor** that follows **a new sophisticated algorithm** that improves performance and reduces power through reduced misprediction and speculation, which has been cut down by 50% for mispredictions and 25% for speculation when compared to the A57.
- b. To improve performance, **the effective decode bandwidth has been increased**, and the decoder has received some AArch64 instruction-fusion enhancements.

### (b) List two changes in the Cortex-A72 that improve power consumption.

- a. Meanwhile power consumption has been tempered at multiple levels, including **optimizing decoding directly**,
- b. and in other **power optimizations to the buffers and flow-control hardware that work around the decoder**.

### (c) This is not answered in the articles, but can you currently buy hardware that contains a Cortex-A72 processor in it?

No there is not. ARM only recently announced the ARM Cortex-A72 processor. And I did not see any develop board with Cortex-A72 on it.