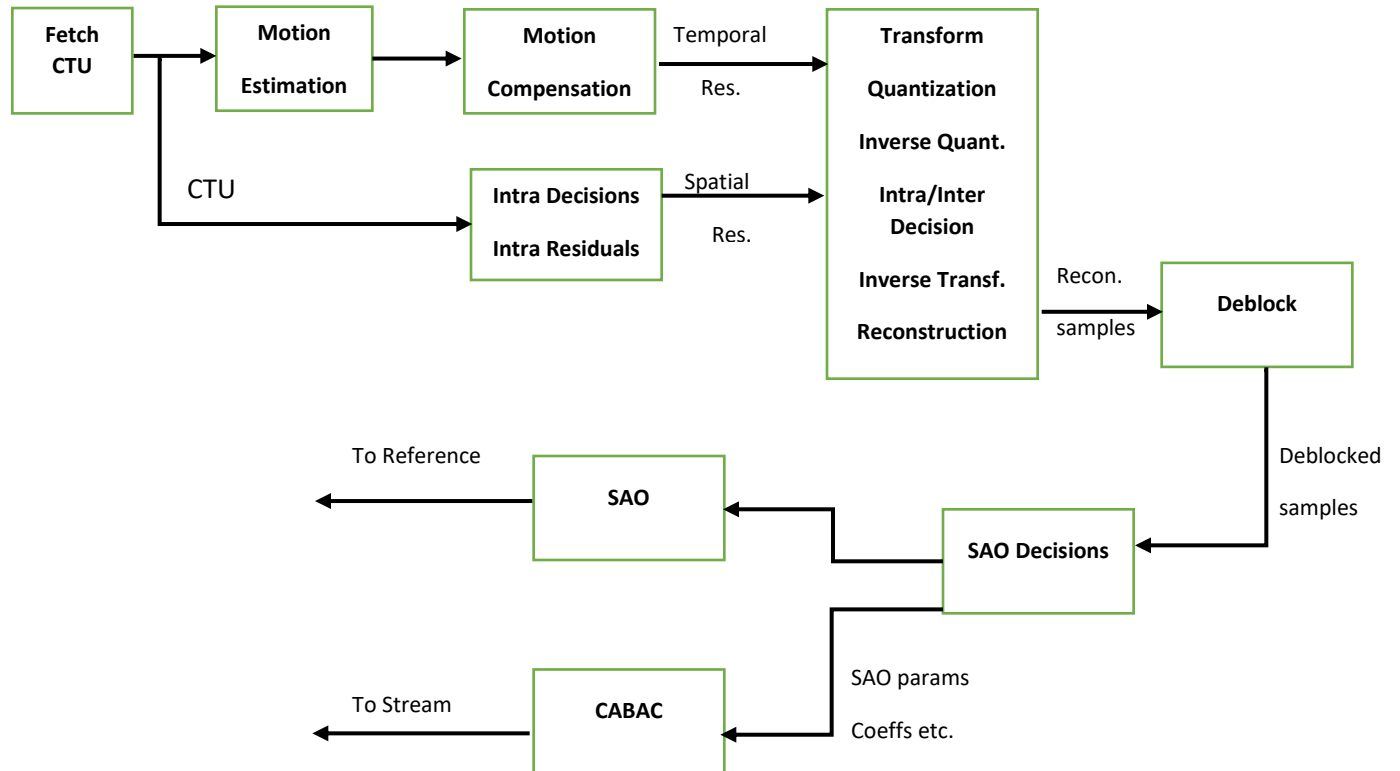


Optimal Incorporation of SAO Decisions in HEVC Encoding Pipeline

The general HEVC encoding pipeline (CTU-based, many details omitted):

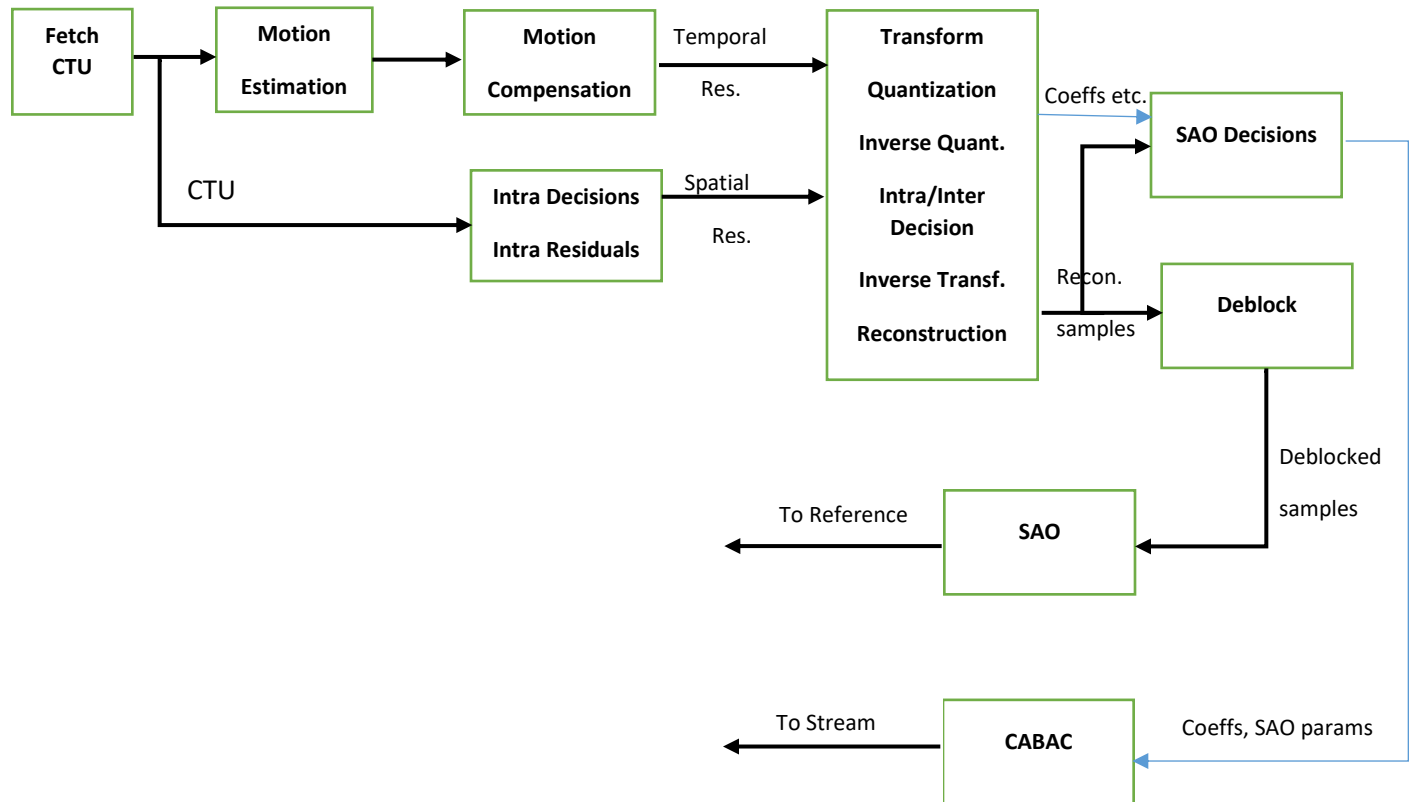


The problem is SAO Decisions Module – can we couple (or to parallel in technical jargon) SAO Decisions Unit with Deblock?

According to HEVC spec. SAO is executed after Deblocking and it's naturally to perform SAO decisions over deblocked samples (i.e. after Deblock module).

Because SAO parameters are signaled in CTU header, CABAC should be performed after SAO Decisions module.

Let's couple SAO decisions with Deblock:



So, in the above pipeline SAO decisions are taken over reconstructed samples. This is sub-optimal decisions but the pipeline is shorter.

The question is – what's penalty if SAO decisions are taken over reconstructed samples instead of deblocking ones?