

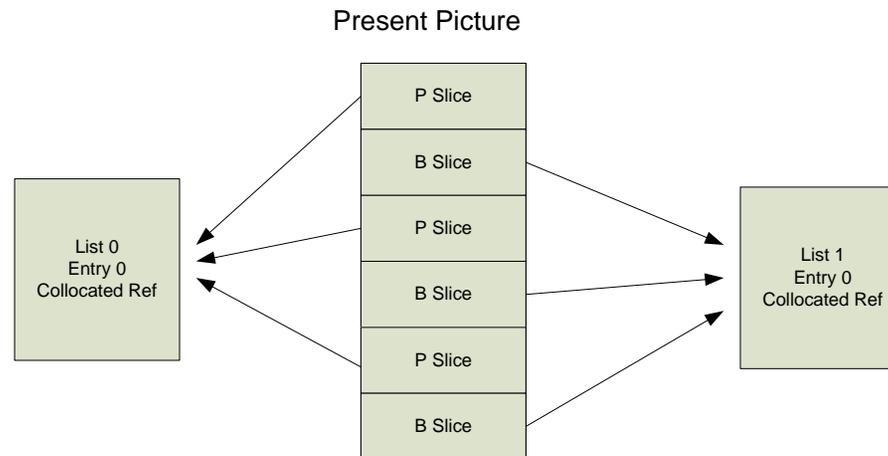


H0442 – Limiting Collocated Temporal Reference to One Per Picture

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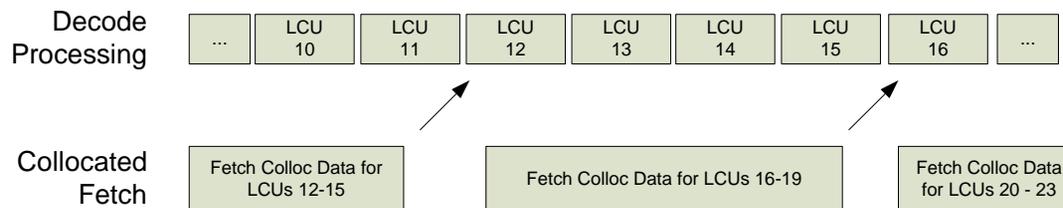
Present Collocated Reference Definition

- P Slices: Comes from List 0 Entry 0
- B Slices: Comes from List 0 or List 1 Entry 0 (header bit)
- Problem: Collocated Picture can change on every slice!
 - Switching between P & B slices
 - Reference List reordering



Why is this a Problem?

- Collocated data stored in DRAM
 - Long fetch latency
- Pipelined Decoder Must Prefetch Collocated Data
 - Many LCUs grouped together to get efficient burst size
 - Changing collocated reference breaks the pipelining



Solution: One collocated Reference per Picture



- Why Allow Collocated Ref to Change in the middle?
 - No coding gain has been shown
- Add Simple Syntax to Slice Header
 - 1 syntax element: RefIdx of collocated picture in list (UE encoding)
 - For default case (entry 0), this only adds one bit to the header
 - All slices must point to the same collocated ref picture
 - Side benefit: Encoder can choose arbitrary collocated picture

...	
if(slice_type == B)	
collocated_from_10_flag	u(1)
if (slice_type != I)	
collocated_ref_idx	ue(v)
...	

Conclusion



- Collocated Reference should not be allowed to change in a picture
- Add single syntax element to specify collocated reference