

JCTVC-H0255

On partial updating of APS parameters

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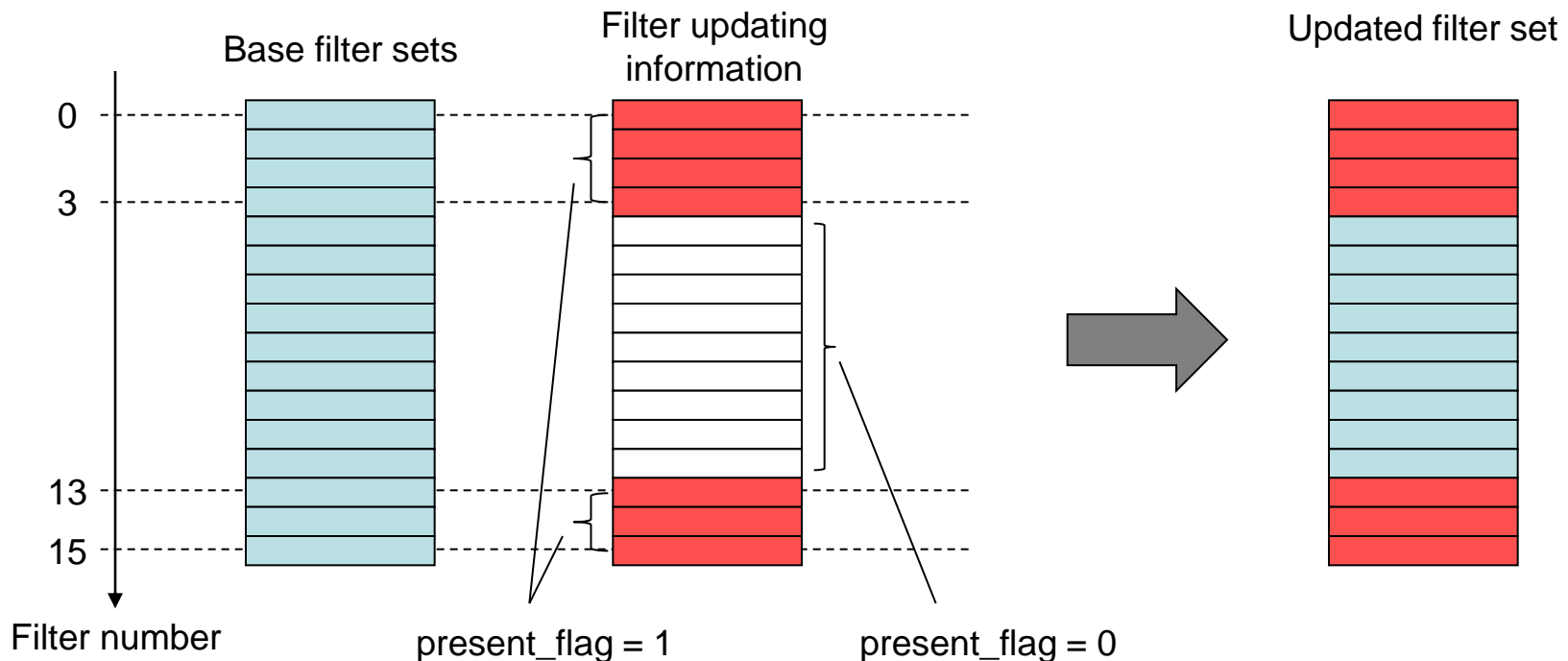
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Overall Summary

- In JCTVC-G1026, a multiple APSs referring approach is proposed to save bits from coding repeated APS parameters.
 - But this APS mechanism cannot update a part of filter set for ALF and a part of Q-matrix parameter set.
- Propose two partial parameter updating schemes for adaptation parameter set (APS)
 - Method1: Introduce a present flag for each filter and for each matrix. A slice header refers multiple aps_ids.
 - Method2: Introduce partial updating parameters in a slice header
- Propose one of them to be adopted to HM-6

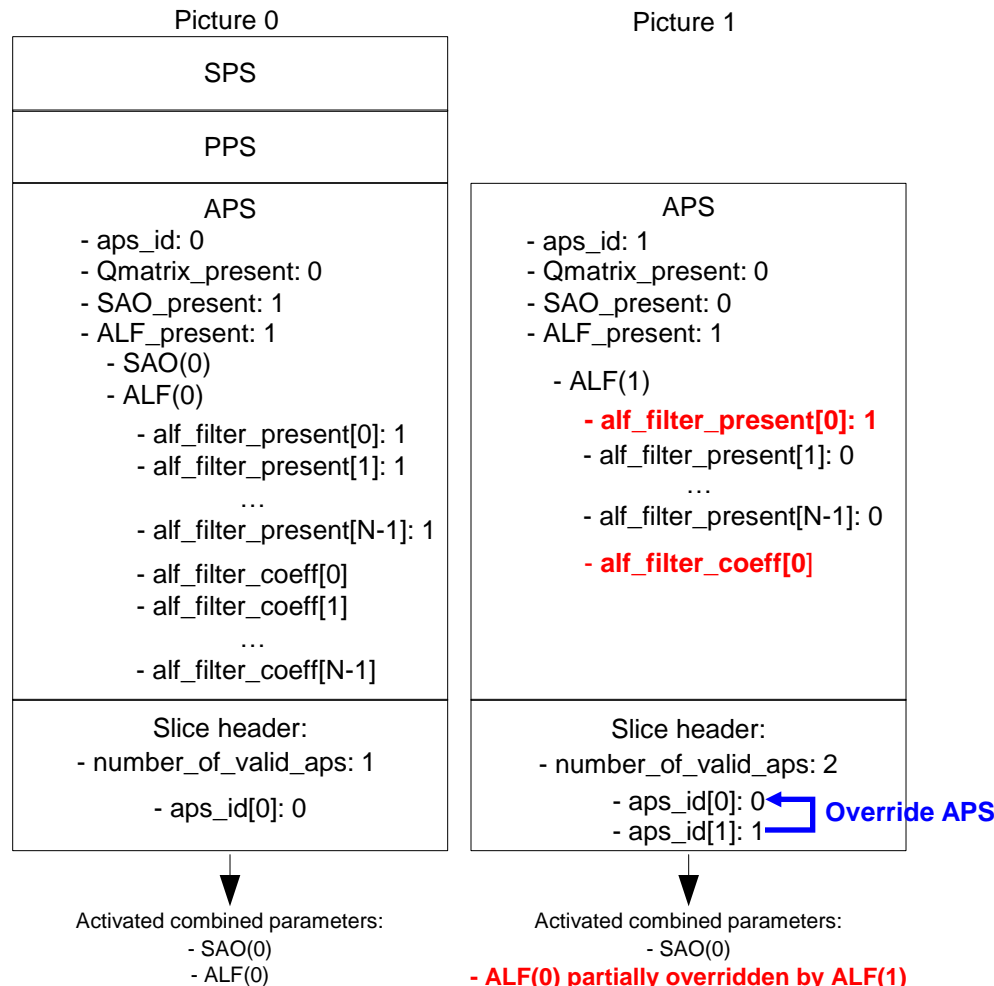
Motivations

- Reduce of the overhead of signaling duplicated ALF filter or Q-matrix
 - For example: To update a part of ALF filter set, the current specification needs to replace whole of ALF filter set
- Objective: A part of ALF filter set and a part of Q-matrix parameter set can be updated in each slice
 - For example: Update No.0 to 3 and No.13 to 15 filters in a slice



Partial updating method 1

- Propose to introduce a present flag for each filter and for each matrix. A slice header refers multiple aps_ids.



Partial updating method 2

- Propose to introduce parameters for partial updating in a slice header

Partial updating
parameters

slice_header() {	Descriptor
...	
entropy_slice_flag	u(1)
if(!entropy_slice_flag) {	
...	
if(scaling_list_enable_flag deblocking_filter_in_APS_enabled_flag sample_adaptive_offset_enabled_flag adaptive_loop_filter_enabled_flag) {	
if(sample_adaptive_offset_enabled_flag)	
slice_sample_adaptive_offset_flag	u(1)
if(adaptive_loop_filter_enabled_flag)	
slice_adaptive_loop_filter_flag	u(1)
aps_id	ue(v)
aps Updating parameter enable flag	u(1)
if(aps Updating parameter enable flag) {	
Updating scaling list data present flag	u(1)
Updating sample adaptive offset flag	u(1)
Updating adaptive loop filter flag	u(1)
if(Updating scaling list data present flag)	
scaling_list_param()	
if(Updating sample adaptive offset flag)	
sao_param()	
if(Updating adaptive loop filter flag)	
alf_param()	
}	

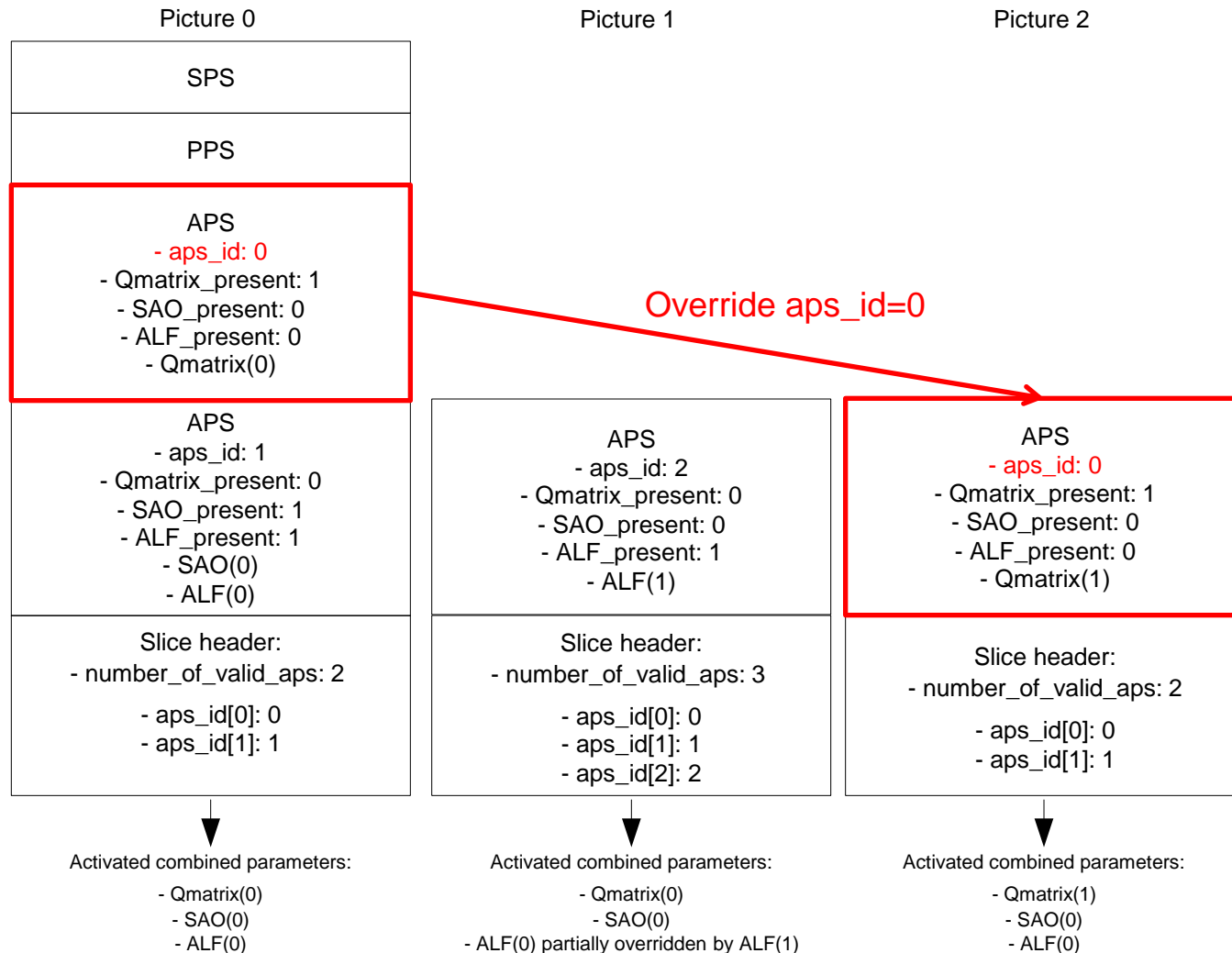
- **alf_filter_present[0]: 1**
- alf_filter_present[1]: 0
...
- alf_filter_present[N-1]: 0
- **alf_filter_coeff[0]**

- **Qmatrix_sub_present[0][0]: 1**
- Qmatrix_sub_present[0][1]: 0
...
- Qmatrix_sub_present[L-1][M-1]: 0
- **Qmatrix[0][0]**

No additional aps_id for partial APS updating

Reusing aps_id

- Save the increase of number of aps_ids



Conclusions

- Propose two partial parameter updating schemes for APS
 - Method1: Introduce a present flag for each filter and for each matrix. A slice header refers multiple aps_ids.
 - Method2: Introduce partial updating parameters in a slice header
- Reusing aps_id scheme is also proposed
- Propose one of two schemes to be adopted to HM-6