CCITT SGXV
Working Party XV/1
Specialists Group on Coding for Visual Telephony

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SOURCE: CHAIRMAN
TITLE : SOME CLARIFICATIONS FOR RM3

After having consulted with Mr. Guichard who coordinated a small group for revising the reference model in Nürnberg, here are described some points to clarify the RM3. In addition to Doc. #141 and Annex 2 to Doc. #181R, this information should be taken into account when implementing the RM3 as well as presenting the simulation results.

1. Block type and block attributes

A block type is determined in the following order;

1) MC/No MC: A motion vector is detected according to Items 19) through 21)/Doc. #141.

2) Filtered/Non Filtered: Two prediction errors are calculated using the block designated by the motion vector, one for the filtered version and the other for the non filtered version. The version giving smaller prediction error is selected according to Section III d)/Annex 2 to Doc. #181R.

3) Intra/Inter: Inter mode determined as described above and intra mode are compared according to Section II a)/Annex 2 to Doc. #181R. It should be noted that the filtered prediction error $d_f(i)$ defined in Section III d)/Annex 2 to Doc. #181R is used for this comparison in case of 'Filtered' decision in the previous step.

4) Coded/Non Coded: When inter mode is selected in the previous step, this attribute value is determined according to Item 8)/Doc. #141.

Block attributes now consist of the following three elements;

- Block address
- Block type
- Filtering indication

As a conclusion Figure shows the block type determination process and block attribute bits for each block type.

More efficient ways to code the block type together with the filtering indication are for further study.

2. Scanning class determination

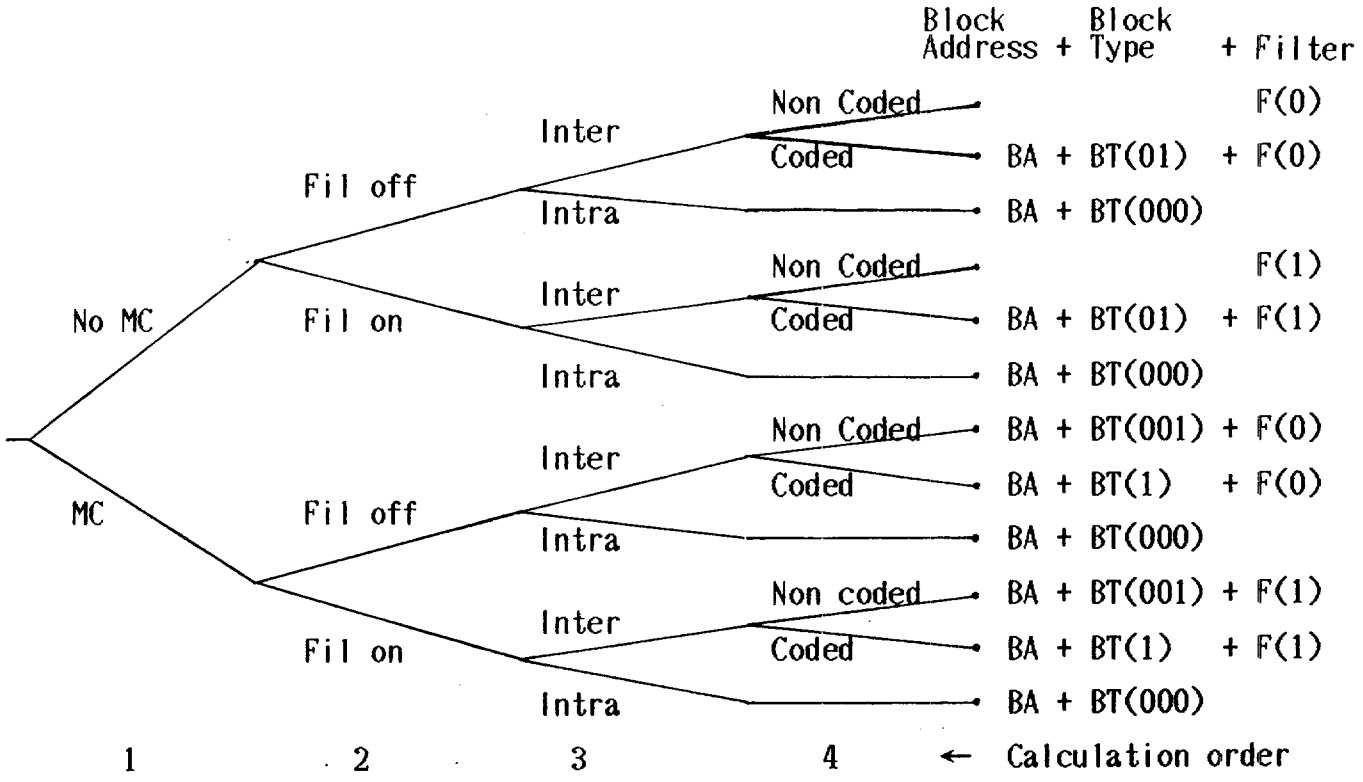
The criterion to determine a class is as follows; the selected class is the one giving the shortest way to reach the last non zero coefficient.

More efficient ways to minimize the total number of bits for zero coefficients, last non-zero coefficients, a class index etc. are for further study.

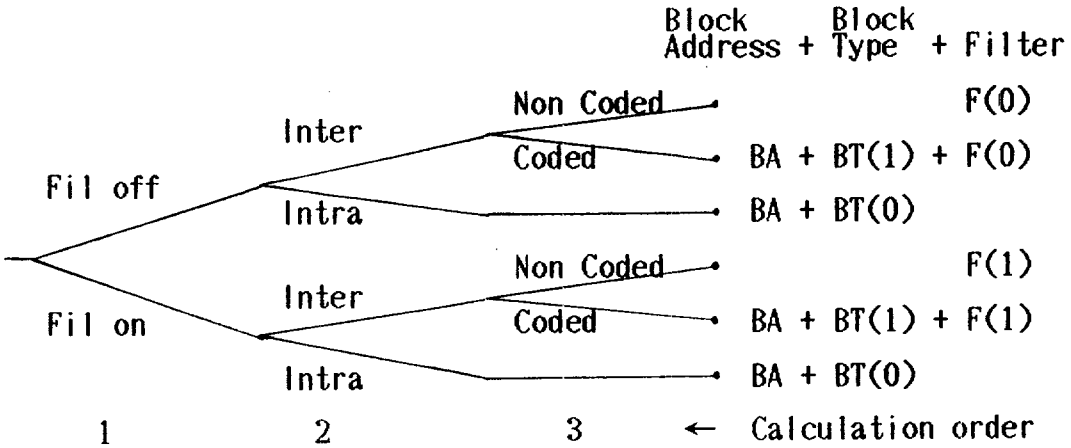
3. Data presentation format

Since the loop filter and the classification are introduced in RM3, the data presentation format as attached is suggested. In this format, C block statistics are simplified to avoid too many numerical data in one table.

End



1) Luminance block



2) Chrominance block

Figure Block type determination and block attributes

Sequence :

Item			The 15th encoded picture	
1)R.M.S. for luminance				
2)SNR				
3)Mean value of the step size				
4)Mean value of the number of non-zero coefficients				
5)Mean value of the number of zeroes before the last non-zero coefficient				
6) Block type of Y	Intra			
	Fixed (Inter/No MC/No coded)			
	Inter (Inter/No MC/Coded)			
	Fixed MC (Inter/MC/No coded)			
	Inter MC (Inter/MC/Coded)			
	Filtered			
7) Block type of C	Intra			
	Fixed (Inter/No coded)			
	Inter (Inter/Coded)			
	Filtered			
8) Number of bits	Attributes	Y		
		C_R		
		C_B		
		Total		
	Classification indexes			
	EOB			
	Motion Vectors			
	Coefficients	Y		
		C_R		
		C_B		
		Total		
	Total			