

ISO-IEC/JTC1/SC29/WG11/MPEG92/342

Compatible/spatial scalable systems use the so called spatio-temporal prediction to improve the image quality. In the current syntax given in TM4.2 this is signalled at every macroblock with a 2-bits field (prediction_weight_code), in a compatible system with the current syntax 79200 bits/s.

In principle it is possible to define the prediction_weight_code in a similar way as quantizer_scale, that is, coding the field only if it changes.

In order to investigate the effectiveness of such a change, simulations have been carried out. The number of occurrences of each compatible prediction mode is given in tables 1, 2 and 3 for the table tennis, flower garden and calendar sequences. Each was coded with 1.15Mbit/s coding the lower layer and a further 2.85Mbit/s coding the upper layer.

An example of the raw data is given below for the table tennis sequence, where '.' indicates spatial prediction, '+' spatio-temporal prediction and '-' temporal prediction.

The statistical results are shown in tables 1, 2 and 3. Table 4 shows the zero order entropy for prediction weight codes and the bits/macroblock needed to code these weight codes if a VLC set of codes of length 1, 2 and 2 bits is used. Table 5 shows the first order entropy for prediction weight codes and the bits/macroblock needed to code these weight codes if a VLC set of codes of length 1, 2 and 2 bits is used, if the weights are only coded when they change.

Previous	Current Macroblock Compatible Type		
	Spatial	Temporal	Spatio-temporal
Spatial	31175	2497	3291
Temporal	2611	8882	2378