

# JCTVC-E104: RQT depth selection

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# RQT

Settings	RQT-Depth (Intra/Inter)
Intra	(3/-)
Intra (lo-co)	(1/-)
Low delay	(3/3)
Low delay (lo-co)	(1/2)
Random access	(3/3)
Random access (lo-co)	(1/2)

# Intra encoding process

- Hadamard checks
- Full R-D checks on top performing modes

PU Size	No of R-D checks
4x4	8 + MPM
8x8	8 + MPM
16x16	3 + MPM
32x32	3 + MPM
64x64	3 + MPM

- RQT checks on chosen mode

# Modified Intra encoding process

- Hadamard checks
- Full R-D checks on top performing modes

PU Size	No of R-D checks
4x4	8 3 + MPM
8x8	8 3 + MPM
16x16	3 + MPM
32x32	3 + MPM
64x64	3 + MPM

- RQT checks ~~on chosen mode~~
- RQT level 2

# Results

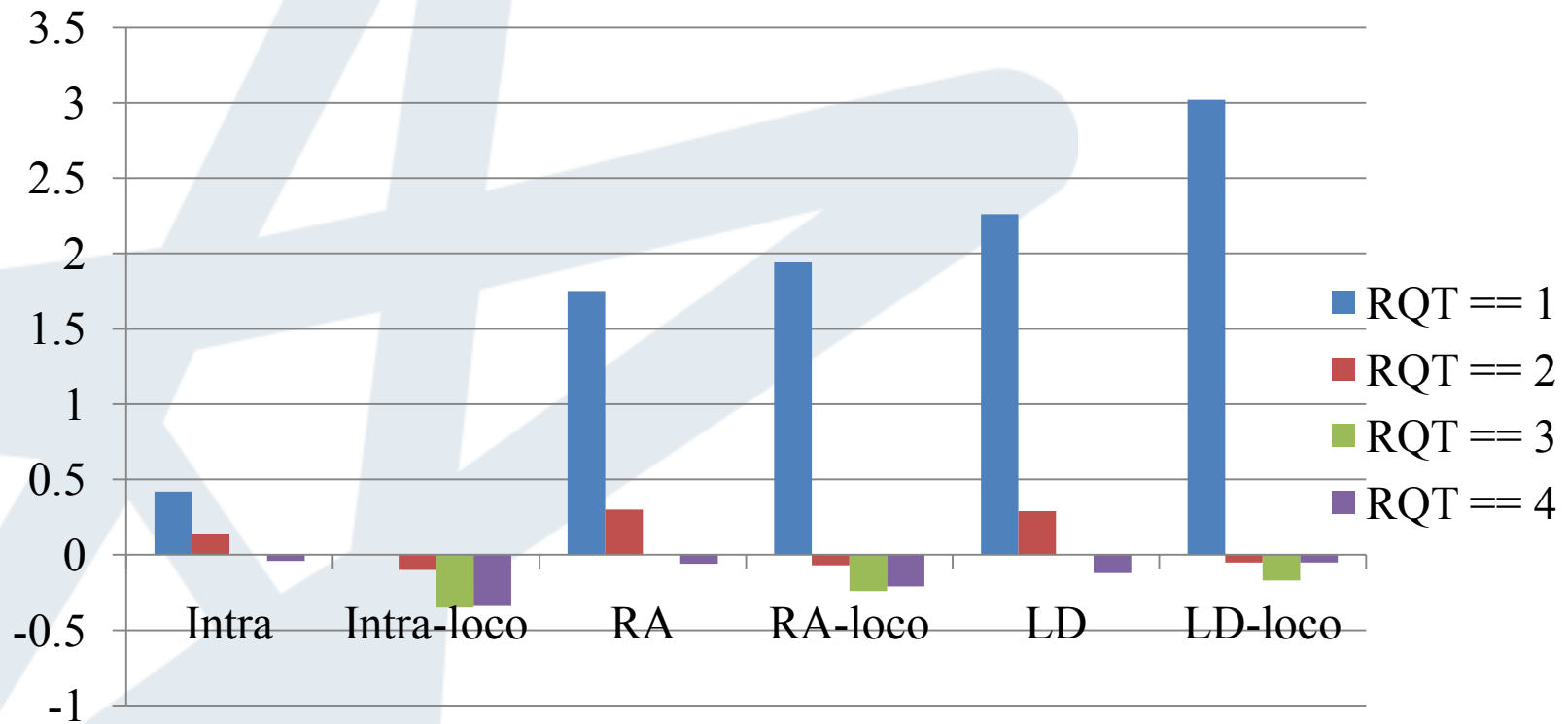
	Intra			Intra LoCo		
	Y BD-rate	U BD-rate	V BD-rate	Y BD-rate	U BD-rate	V BD-rate
Class A	0.02	-0.05	0.01	-0.24	0.99	1.00
Class B	0.07	-0.13	-0.10	-0.49	0.23	0.32
Class C	0.06	-0.33	-0.29	-0.32	-0.35	-0.25
Class D	0.14	-0.41	-0.36	-0.10	-0.31	-0.45
Class E	0.01	-0.01	-0.04	-0.75	2.03	1.53
All	0.06	-0.19	-0.16	-0.37	0.43	0.37
Enc Time[%]	87%			94%		
Dec Time[%]	100%			101%		

# Results

	Random access			Random access LoCo		
	Y BD-rate	U BD-rate	V BD-rate	Y BD-rate	U BD-rate	V BD-rate
Class A	0.21	0.43	-0.33	-0.27	1.55	1.44
Class B	0.29	0.17	0.04	-0.26	0.77	0.57
Class C	0.18	-0.07	0.07	-0.20	-0.21	0.14
Class D	0.30	-0.23	-0.01	-0.05	0.07	-0.18
Class E						
All	0.25	0.08	-0.05	-0.20	0.56	0.50
Enc Time[%]	91%			100%		
Dec Time[%]	100%			100%		

	Low delay			Low delay LoCo		
	Y BD-rate	U BD-rate	V BD-rate	Y BD-rate	U BD-rate	V BD-rate
Class A						
Class B	0.32	0.90	0.89	-0.20	0.33	0.46
Class C	0.20	0.44	0.37	-0.21	0.06	0.05
Class D	0.21	0.46	0.03	-0.03	0.40	0.04
Class E	0.00	-0.25	1.32	-0.17	1.41	0.78
All	0.20	0.46	0.63	-0.15	0.48	0.31
Enc Time[%]	92%			100%		
Dec Time[%]	100%			100%		

# Experiments on RQT



# Conclusions

- Most of the gains of RQT can be obtained by setting  $RQT == 2$
- Modified Intra encoding process reduces complexity at no cost to performance
- Recommend the adoption of the Intra encoding processing and using  $RQT == 2$  the default configuration for all settings