

Slides Media Data Formats

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Questions for Lecture Notes - Section 3.2.2

- 1 What is the “new coding paradigm” JPEG2000 is designed for ?
- 2 Why is JPEG2000 not based on zerotree coding ?
- 3 Summarize the high-level differences between JPEG2000 and JPEG.
- 4 Describe the stages of the JPEG2000 pipeline.
- 5 For colour conversion and DWT, JPEG2000 offers two distinct options. What are the differences ?
- 6 What is the size-relation between subbands and codeblocks ?
(Beware, there is an error in the lecture notes !)
- 7 Describe the Tier-1 Encoding process with its passes - what is a “Chunk” in this context ?
- 8 What is the fundamental coding methodology for lossless encoding in JPEG2000 ?

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- 9 Describe the four coding primitives used.
- 10 What is the “lazy-mode” ?
- 11 Describe how Tier-2 Encoding works.
- 12 What is a precinct ?
- 13 Describe the JPEG2000 bitstream hierarchy.
- 14 How is it determined how many chunks are included per codeblock during the Tier-2 encoding ?
- 15 What is determined by the number of layers ?



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- 16 How is rate-control facilitated in JPEG2000 ?
- 17 Describe the four types of JPEG2000 progressiveness and how this is accomplished by a single bitstream only.
- 18 In the context of region of interest (RoI) coding, what is being standardised in JPEG2000 (and what is not) ?
- 19 Describe the RoI coding strategies in JPEG2000 together with their advantages and disadvantages.
- 20 When do we need to encode the RoI code and if this is not required, pls explain why !
- 21 Describe all parts of the JPEG2000 standard.
- 22 In which applications do we see JPEG2000 being applied ? Why is it not used in the consumer camera market / smartphone cameras ?

Questions for Lecture Notes Section 3.2.3

- 23 In how far is JPEG XR simpler compared to JPEG2000 ?
- 24 Describe the JPEG XR transform in detail - in how far is it related to both, the DCT and the WT ?
- 25 How can we combine PCT and POT ?
- 26 What is the purpose of the POT ?
- 27 Describe the quantisation strategy in JPEG XR - why is it so different compared to JPEG ?
- 28 What are the prediction options available in JPEG XR ?
- 29 In how far is the HP prediction mode dependent on LP coefficients ?
- 30 How is the coefficient scanning pattern being defined (contrasting to JPEG) ?