

Exam: January 12th, 2009

NOTES:

- *Correctness in English is NOT taken into account in the evaluation of the exam.*
- *Hint 1: "brief" and "short" indicate that 3~5 lines of answer are sufficient. The capability of understanding well the question and summarizing efficiently the important technical aspects is a "plus".*
- *Hint 2: Please be focused in your answer. If I ask "what is a motion vector" do not write a three-page description of a video codec.*

1. What is the difference between *size* and *resolution* of an image or a video frame?
2. What kind of data can be efficiently coded with Run-Level coding? Why? Give an example.
3. Provide a short explanation of the following terms:
 - (a) Quality factor (JPEG)
 - (b) Block Matching.
 - (c) VGA format
 - (d) Displaced Frame Difference (DFD)
 - (e) RTP header
4. Draw a block diagram of a basic video **decoder** (such as H.261 decoder) which is based on motion compensated prediction and DCT coding of the prediction error. The input to the encoder is a compressed video bit stream, the output is a sequence of video frames. Explain the function of the frame memory.
5. What is *progressive downloading*? Does it require some special care in creating the content?