



Process Networks Modeling of H.26L

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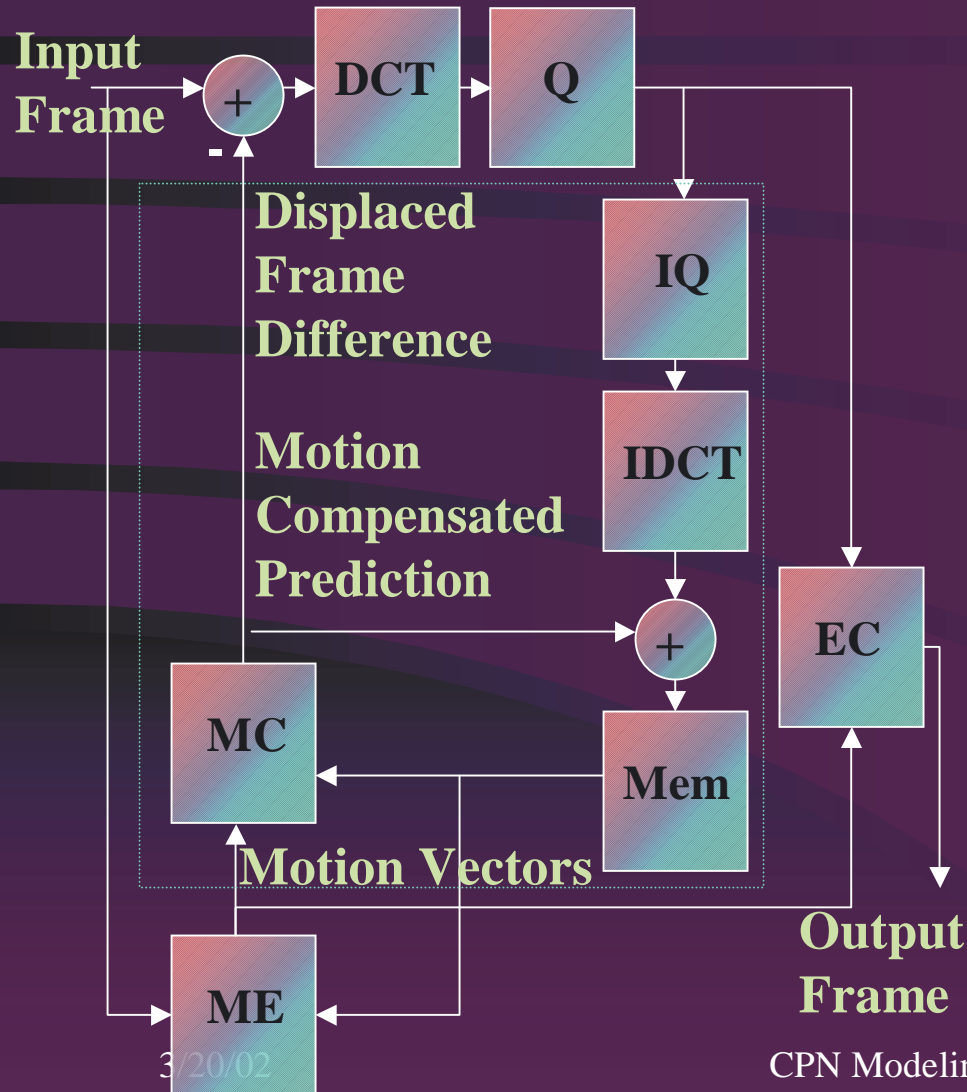
DCT: Discrete Cosine Transform

Q: Quantization

MC/E: Motion Compensation / Estimation

EC: Entropy Coding

H.26L Encoding

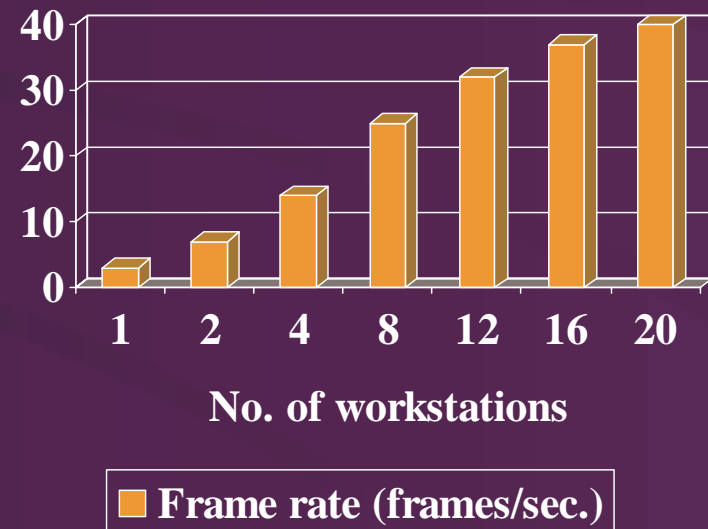


- **Motion representation**
 - Various macroblocks
 - Bidirectional prediction
- **Transform processing**
- **Entropy code**
 - Context based arithmetic
 - Universal variable-length
- **Deblocking filter**
- **Directional I-prediction**

Dataflow Modeling

- MPEG-4 encoder with Computational Process Networks (CPN) [He, Zhong; 2000]
- MPEG-4 load balancing for workstations cluster with Petri Nets [He,Ahmad; 1999]
 - Round-robin
 - Group of workstations
 - Group of video adjusting

Encoder Performance for CIF (352x288) resolution Akiyo sequence



Proposed Work

- CPN modeling of dataflow in H.26L video encoder
 - Real-time encoding
 - Determinacy, correctness, and bounded execution
- Load balancing and synchronization of each node
- Performance comparison
 - Complexity
 - Cost / Scheduling overhead
 - Performance

