samt 2006
1st International Conference on Semantic and Digital Media Technologies
former European Workshop on the Integration of Knowledge, Semantic and Digital Media Technologies
December 6-8, 2006 • Athens, Greece

An engine for content-aware on-line video adaptation

Luis Herranz, Fabricio Tiburzi, Jesús Bescós

UAM UNIVERSIDAD AUTONOMA DE MADRID

Grupo de Tratamiento de Imágenes

Objectives

- On-line selection of relevant frames for adaptation purposes
- Operation over different video coding standards

Contributions

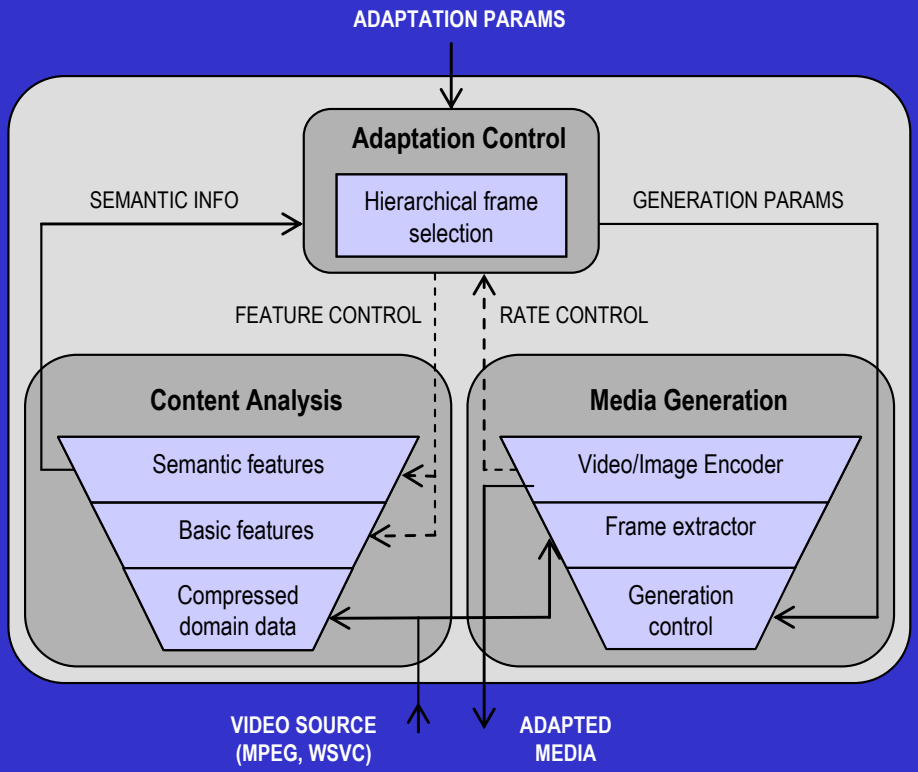
- A hierarchical approach to on-line selection of a variable number of frames based on global frame features.
- A functional model for the analysis of video sequences.
- Feature extraction algorithms for on-line compressed domain analysis.

Original Media

Adapted Media

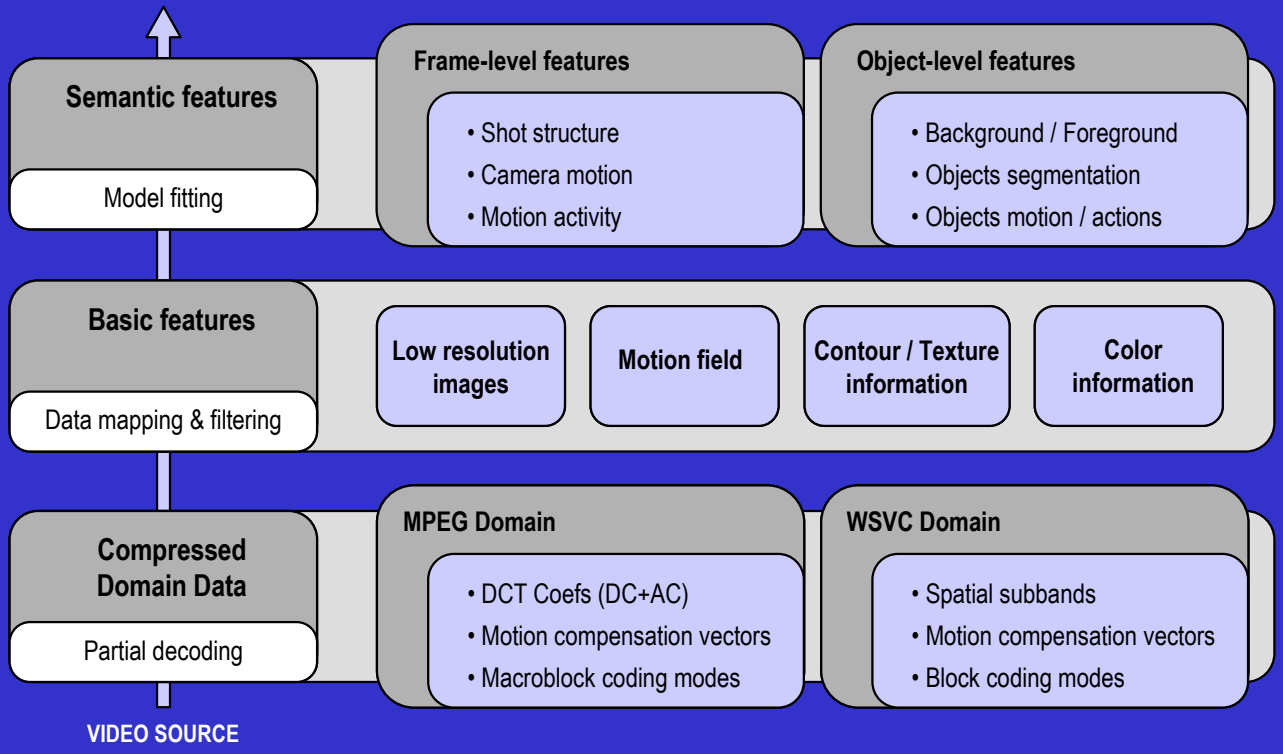
Framework overview

- One of a series of Content Adaptation Tools developed under the aceMedia Project (FP6-001765).

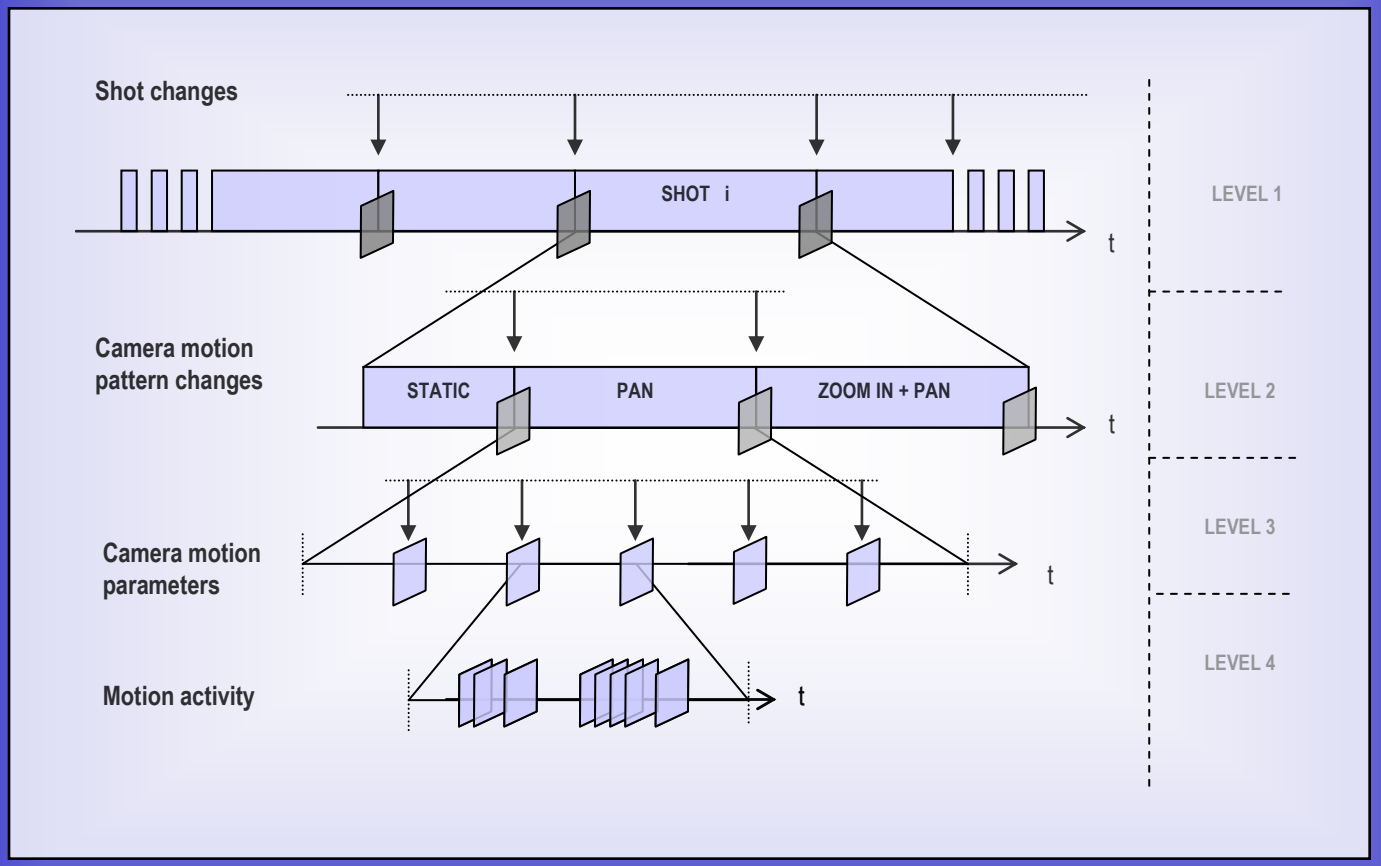


Compressed-domain feature extraction

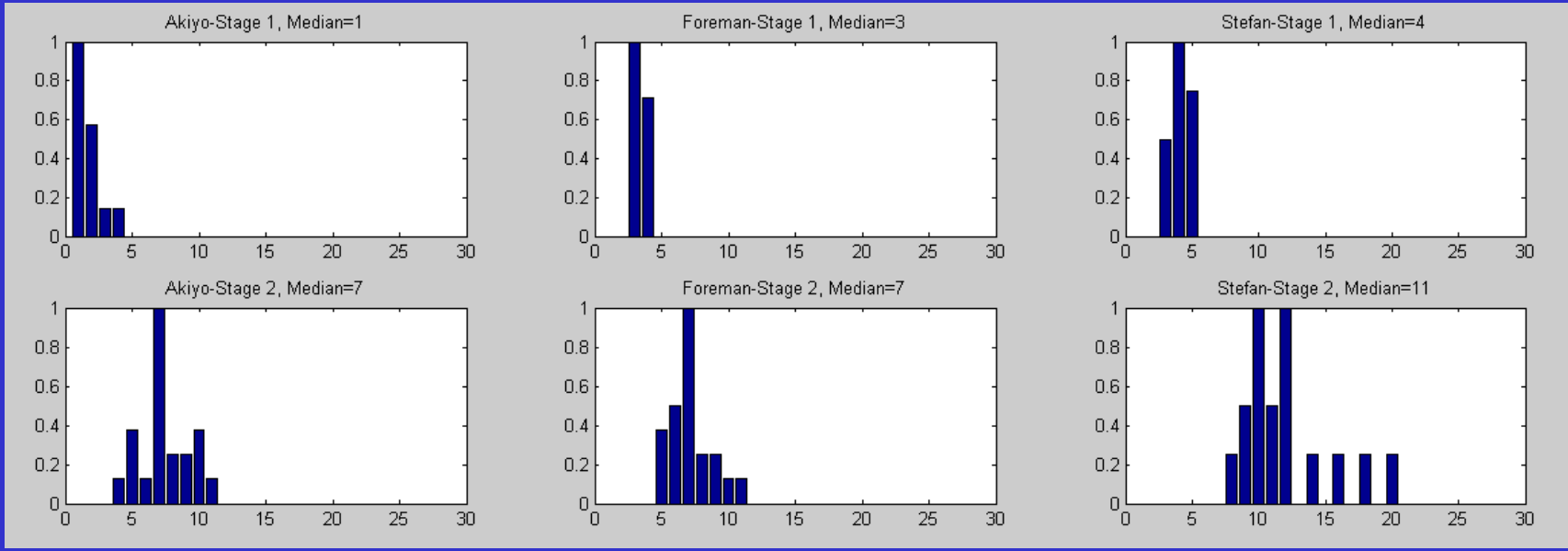
- An abstraction model for compressed domain analysis of video sequences focused on on-line approaches.



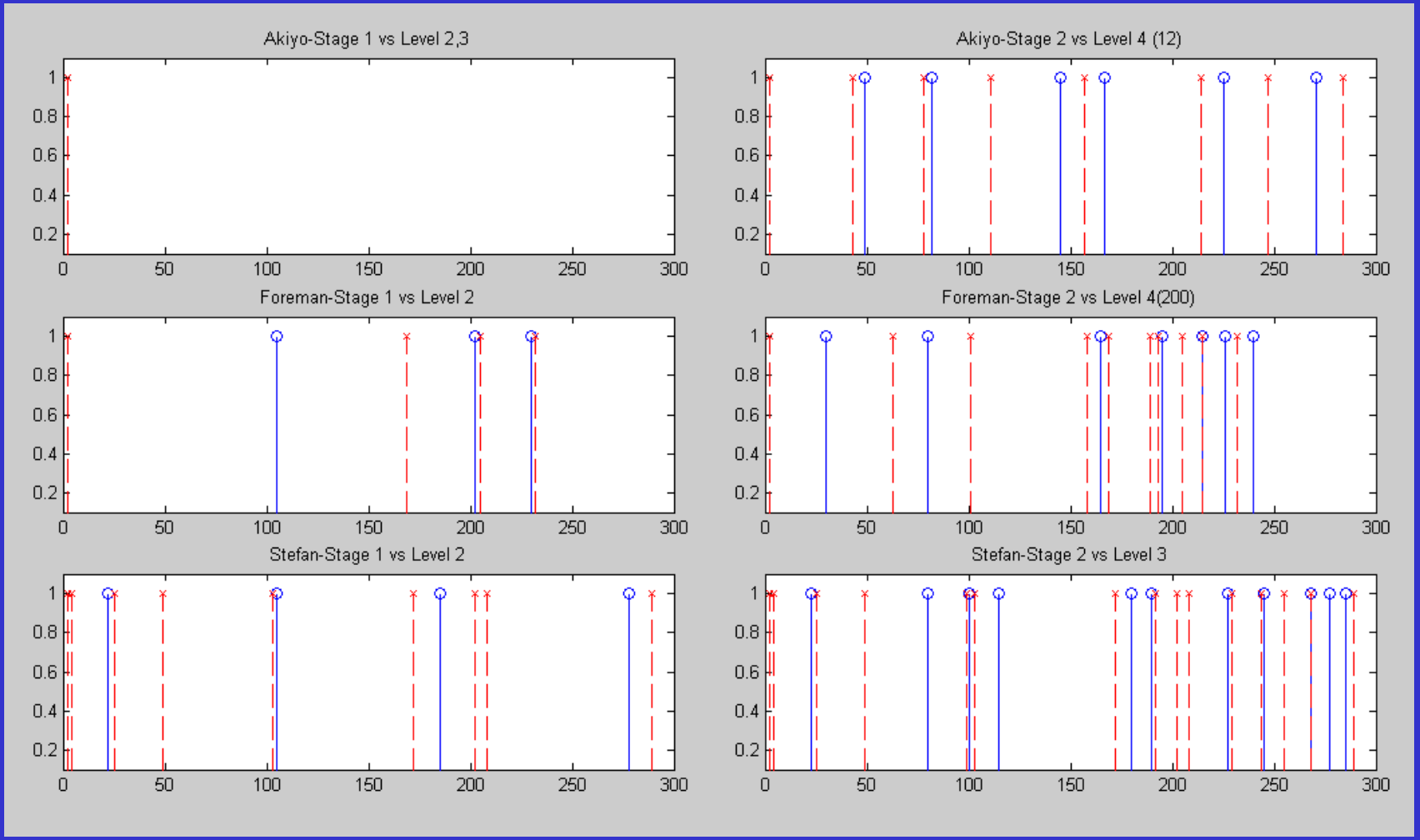
Hierarchical frame selection



- Evaluation of the frame selection approach
  - Data collection and ground truth generation.
    - 3 test sequences, 28 assessors, 2 selection criterions.
    - Reference selection: number and location of selected frames.

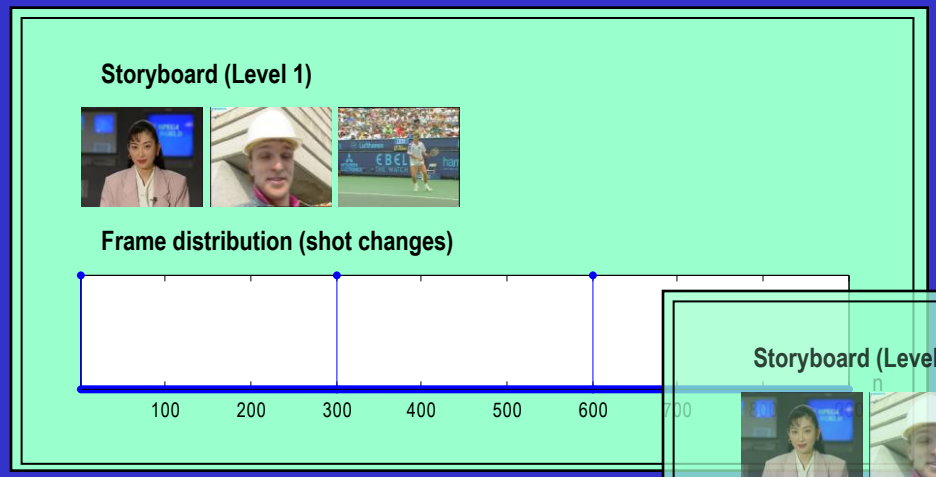


- Qualitative evaluation of the selection algorithm

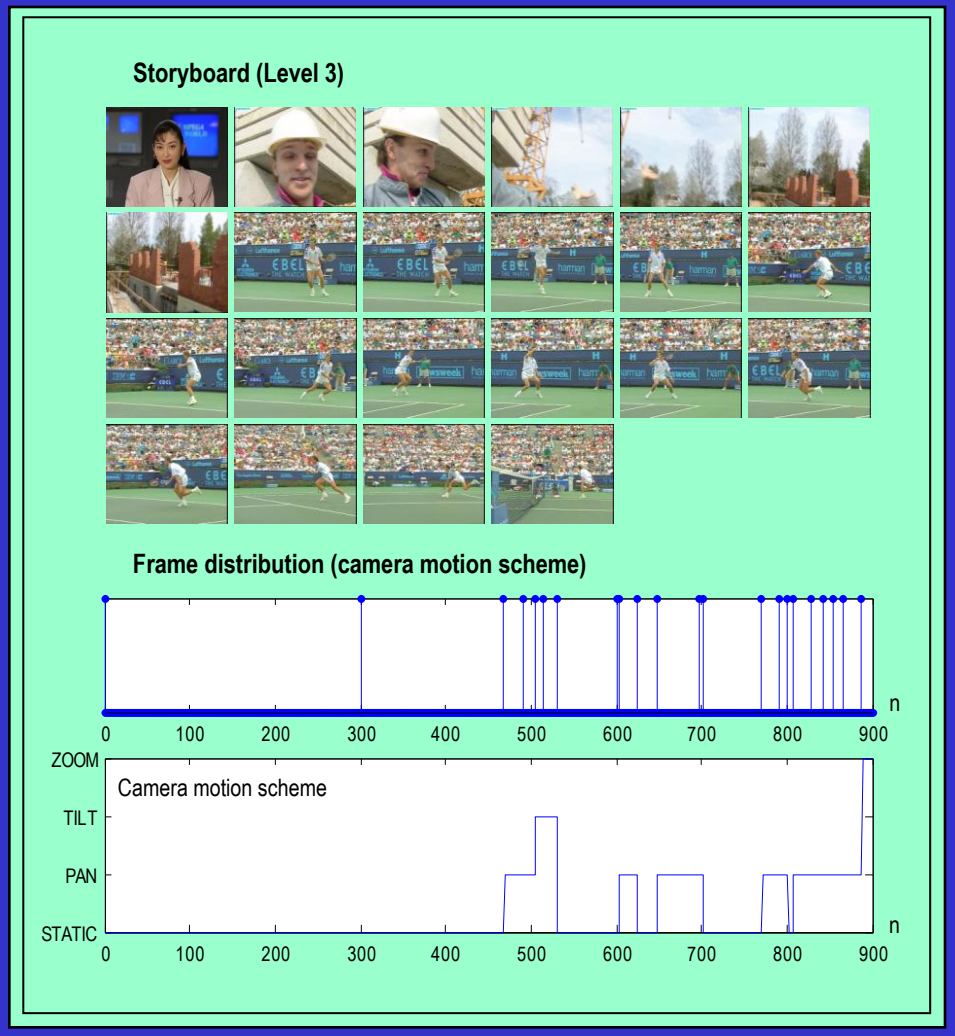


Application examples and results

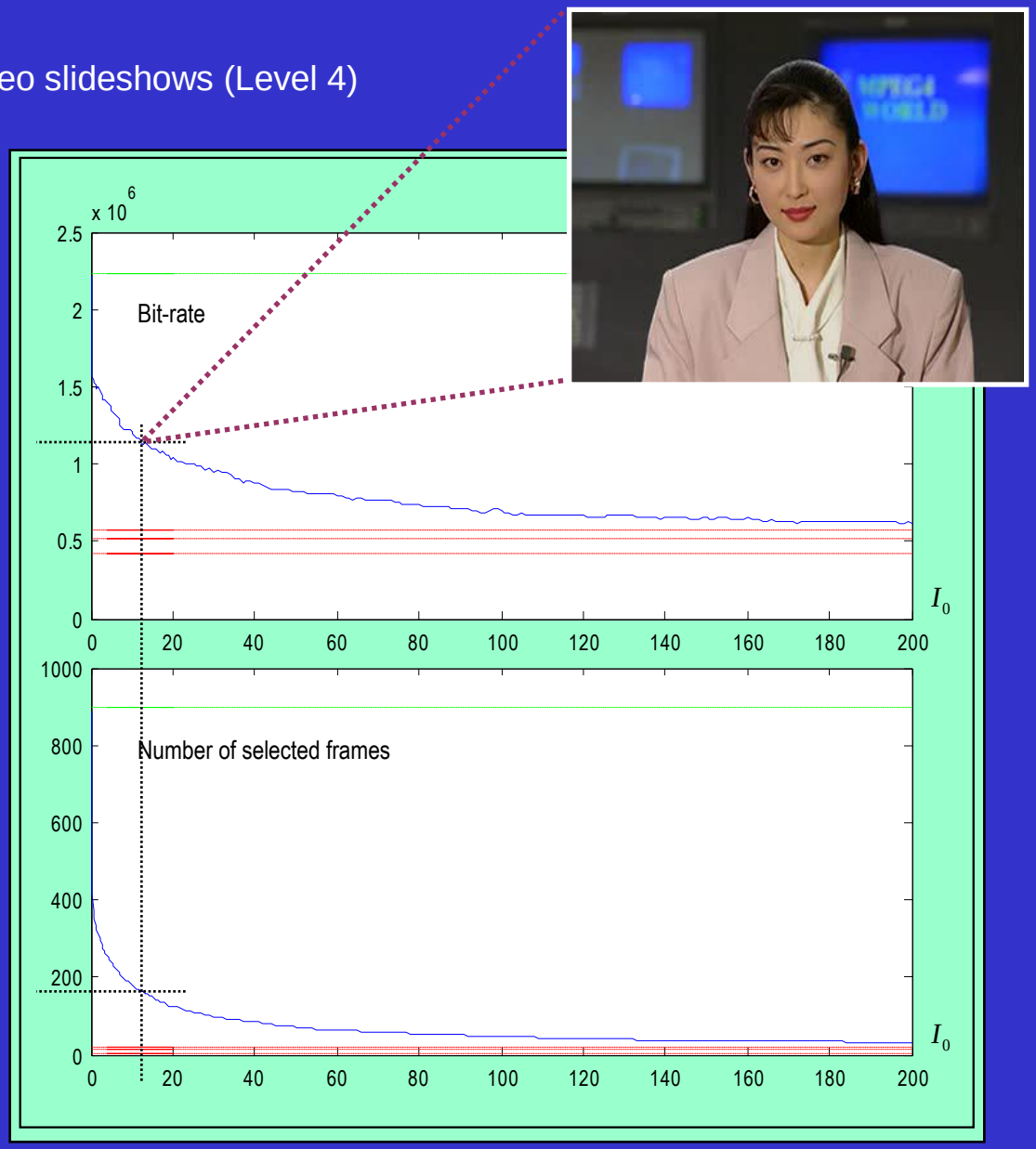
- Storyboards (Levels 1 & 2)



- Storyboard (Level 3)



- Video slideshows (Level 4)



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