hSITE ARR 2010 report

Fabrice Labeau
Mohsen Akbari
Hussain Al-Muscati
Hoda Daou
Vahid Raissi Dehkordi
Di Lin
Burak Solak

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Situation within hSITE

- Task 2.2.2: Advanced Compression and Fidelity/Rate Modeling for Resource Allocation
  - Goal:source signal processing to allow for the efficient allocation of resources to transmit signals over a clinical network, characterized by highly time varying bandwidth and sudden changes in allocated bandwidths to low priority signals (such as e.g. video)

Overview of motivation

- In hospital network with transmission of
  - Medical information
    - Real time communications
    - Monitoring Signals
    - Other Data
  - Commercial services

- Requires agile
  - Compression mechanisms
  - Resource allocation mechanisms

Graceful Degradation Compression

- Goal:
  - Create new compression tools that allow graceful degradation
- Results:
  - OFB with variable downsampling
  - OFB with arbitrary erasure patterns
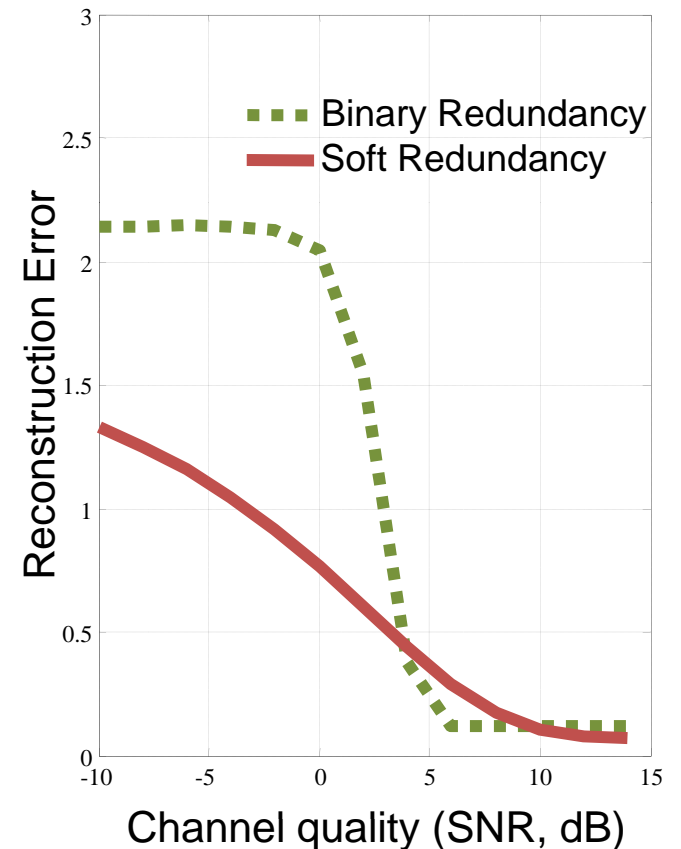
Scalable Coding

- Goal:
  - Make scalable compression tools available to easily allow for resource allocation
- Modalities:
  - Video
    - Transcoding to scalable standard
    - Complexity Scalable encoder
  - EEG
    - Scalable embedded coder
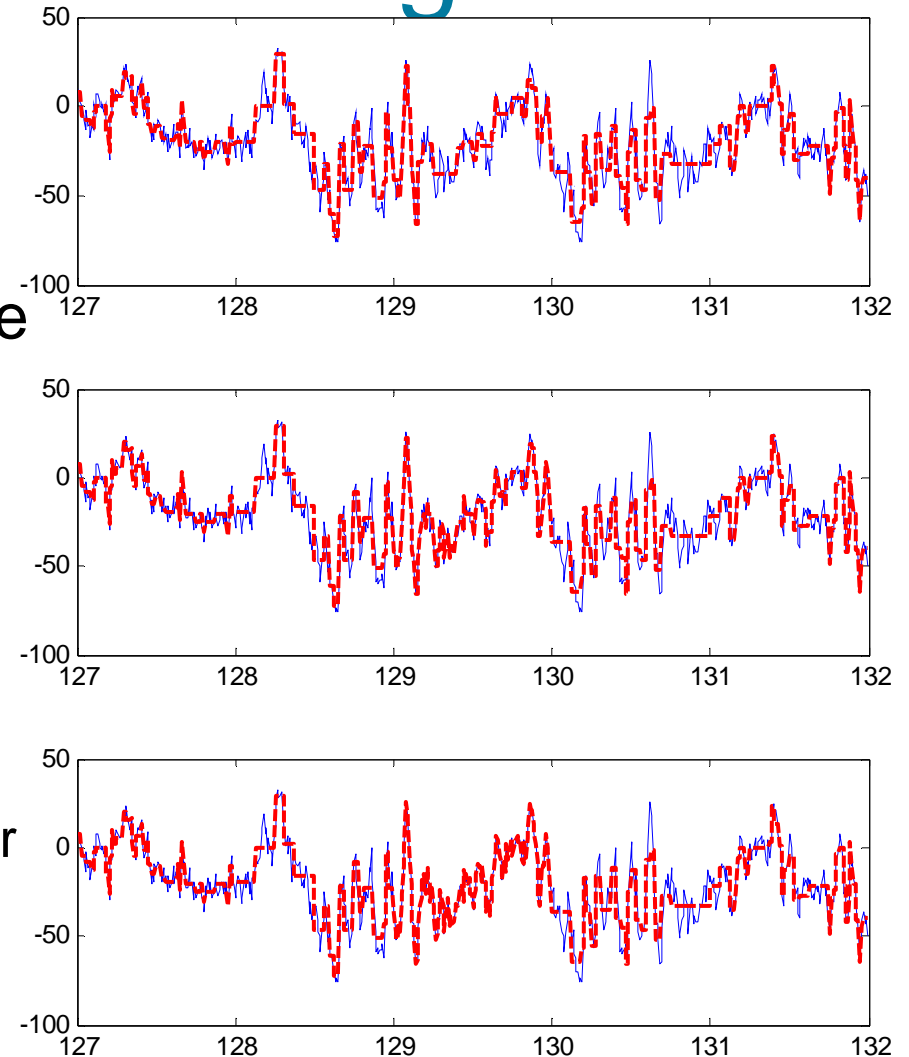
Resource Allocation

- Goal: Study the resource (bandwidth) allocation issues using patient flow models and data production models