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3 May 2006

# e-Research on Multimedia Technology, Systems, and Communications

# Proposed Centre for Multimedia Technology, Systems, and Communications (1/4)

- **Gippsland School of IT**
  - Multimedia Research Group (MRG)
    - > Multimedia signal processing
      - Image and video segmentation and shape coding
      - Conventional and distributed video coding
      - Multimedia streaming and video-on-demand
      - Multimedia indexing and retrieval
      - Multimedia security
      - Audio semantics and signal processing
    - > Multimedia communications
      - Cellular resource management for multimedia traffic
      - Sensor and ad-hoc multimedia networks
      - Tele-medicine
  - Intelligent multimedia computing
    - > Artificial neural networks
    - > Genetic algorithms
  - Flexible learning

# Proposed Centre for Multimedia Technology, Systems, and Communications (2/4)

- **Clayton School of IT (former School of Computer Science and Software Engineering)**
  - Audiovisual Information Processing and Digital Communications (AVIPAC) research group
    - > Multimedia communications
      - Telecommunications and computer networking
      - Visual communications
      - Information and network security
    - > Multimedia signal processing
      - Imagery database retrieval
      - Image processing and compression
      - computer vision
    - > Intelligent multimedia computing
      - Adaptive, neural networks and fuzzy logic methods for signal processing and communications
  - Multimedia database
  - Multimedia retrieval systems

# Proposed Centre for Multimedia Technology, Systems, and Communications (3/4)

- **Berwick School of IT (former School of Multimedia Systems)**
  - Multimedia systems
    - > Animation
    - > Interactive environments and multimedia visualisation
    - > Game design & development
  - Computer mediated education
    - > Multimedia learning for hearing impaired children
    - > Distributed cognition
  - Information security and ethics
    - > e-Surveillance
    - > Ethical and social Implications of media

# Proposed Centre for Multimedia Technology, Systems, and Communications (4/4)

- **Peninsula School of IT (former School of Network Computing)**
  - Computer mediated education
    - > Flexible learning models for on campus and distance learning students using web based applications, together with audio and video technologies
  - Multimedia and information management
    - > Multimedia synchronisation with agents
    - > Human perception of multimedia synchronisation
    - > Synchronisation of multimedia streams in a distributed environment

# Strength of the Proposed Centre

- **35+ academic staff**
- **50+ PhD students**
- **Successful ARC Discovery and Linkage, and other large grants**
- **Strong publication track record**
- **Industry and international collaboration**

# Some e-Research Projects based on the Current Strengths of the Proposed Centre

- **Multimedia Signal Processing**
  - Distributed coding
  - Transcoding
  - Multimedia cryptography and authentication
  - Forensic multimedia
- **Multimedia Communications**
  - Grid video-on-demand
  - Low power handheld device
  - e-Surveillance
- **Multimedia Systems**
  - Visualisation
  - Virtual reality
  - Tele-medicine
  - e-Games
- **Flexible Learning**
  - Multimedia archive