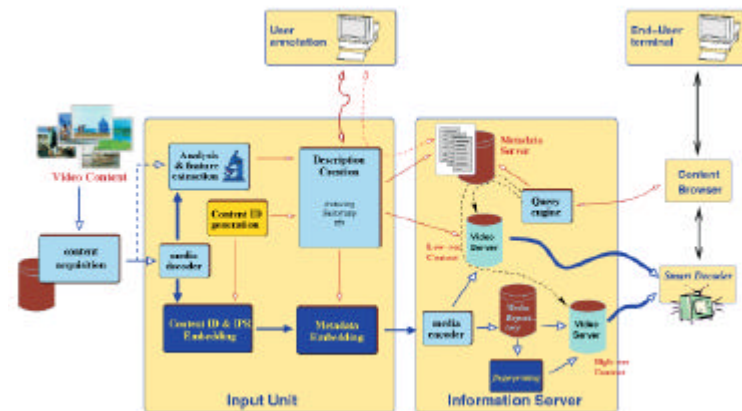




**Bringing User Satisfaction to Media Access Networks**  
 A European Union Information Society Technologies Project



System Architecture

The technologies targeted by the BUSMAN project are:

*Watermarking*

*Metadata*

The project is developing and will trial a unique mix of these technologies to enable seamless and secure provider-to-customer delivery of video components across heterogeneous channels. The system will provide a secure and efficient system for the annotation and querying of large video databases over fixed and mobile networks. Effective human factor studies are part of the design, performance and system integration stages

The technology underpinning the next generation of multimedia systems and services is based on highly flexible, secure and user-centred multimedia information delivery and access. BUSMAN is assisting in meeting these needs.

### **BUSMAN considers two classes of users**

#### **Provider or Content Creator:**

Advanced watermarking techniques with different levels of robustness and capacity are used to link content with metadata and resist processing and fraudulent attacks.

Efficient supervised algorithms are implemented combining semantic and low level video descriptors. Descriptors will be compliant with the MPEG-7 standard.

#### **End consumer:**

Access to the information using query structures which are familiar and understandable by users.

Very low access latency and fast response to user query.

Retrieval processes which understand the nature of the metadata information.

### **PROTOTYPE**

The final demonstration will be performed using video delivery in MPEG-2 and MPEG-4 format through GPRS and UMTS packet data communications channels, fast fixed networks and the Internet. The BUSMAN prototype will comprise three classes of functional components:

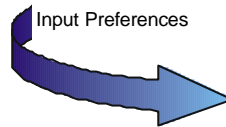
**user applications** - provide functionality to end users, annotators and administrators.

**content servers**

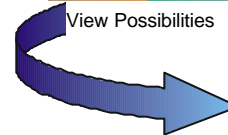
**processing components** - perform selected tasks such as watermarking, metadata extraction and transcoding.



Input Preferences



View Possibilities



Preview Selection

Delivery and querying are considered across mobile environments based on GPRS and packet data communications, fast fixed networks and the Internet.

### **BUSMAN R&D Areas**

**Area 1: Requirements Analysis and User-Centred Design.** Analysis and definition of system requirements, architecture and design tailored as appropriate for content providers and consumers according to human factor principles.

**Area 2: Data Embedding Techniques.** Techniques to embed multilevel watermarks with different degrees of robustness and capacity according to different application scenarios.

**Area 3: Specification of the Video Indexing and Retrieval Sub-system.** Efficient video indexing and retrieval, meta-search engine to search video databases using a query example and its embedded Digital Item Identifier.

**Area 4: System Implementation and Integration.**

**Area 5: Usability Testing.** Usability evaluation with representative user groups throughout the project life.



BUSMAN is a European Union 5th framework project in the Information Society Technologies programme. The project started in April 2002 and will run until the end of September 2004. There are eight partners with Queen Mary, University of London as overall co-ordinator and Telefónica I & D as technical co-ordinator.

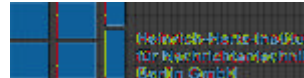
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