De-identification for privacy protection in multimedia content
IC 1206 COST Action

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Background and Motivation

- **Privacy** - the ability of an individual or group to have their personal information and affairs *secluded* from others, and to *disclose* them as they choose.

- **De-identification in multimedia content** - process of concealing or removing personal identifiers, or replacing them with surrogate *personal identifiers* in *personal information*, in order to prevent the disclosure and use of data for purposes unrelated to the purpose for which the information was originally obtained.
Background and Motivation

- A variety of scenarios to capture audio-video recordings of people, either for immediate inspection or for storage and subsequent analysis and sharing.

- The widespread use of video surveillance cameras and intelligent networks of sensors in public locations and the use of reliable biometric-based recognition software enable identification and tracking of people in real time.
Background and Motivation

• Technologies like “Google Street View” and “EveryScape” provide an additional framework for the invasion of the individuals’ privacy

• Special attention needs to be given to develop de-identification technologies for Internet sites, and predominate social networks (Facebook, YouTube, Twitter)
Background and Motivation

- Identity information extracted from multimedia documents can be of various forms including:
  
  (i) non-biometric data (text, dressing style, hairstyle, speech context, specific social and political context, environment)
  
  (ii) physical biometric data
  
  (iii) behavioural biometric data
  
  (vi) soft biometric data
De-identification is an interdisciplinary challenge, involving scientific areas:
(i) image processing
(ii) pattern recognition
(ii) speech analysis
(iii) video tracking
(iv) biometrics
(v) machine learning

In order to maximise the efficacy and employability of de-identification, the Action provides the required insights and perspectives on social, ethical, legal aspects of privacy.
Aims and Objectives

• The aim of the Action is:

(i) to facilitate and promote coordinated efforts in automated person de-identification in multimedia content through the provision of an effective and innovative approach to the integration of relevant European experts, institutions and organisations, as well as non-COST experts

(ii) to provide the required insights and perspectives on social, ethical, legal aspects of privacy, and to facilitate self-sustaining links and cooperation amongst the researchers, the potential end-users, and system integrators
Aims and Objectives

• The main objectives:

(i) To establish mechanisms for sharing knowledge and technology among experts in different (usually complementary) fields related to automated de-identification and reversible de-identification

(ii) To provide innovative solutions for concealing, or removal of identifiers while preserving data utility and/or naturalness

(iii) To investigate reversible de-identification and to provide a thorough analysis of security risks of reversible de-identification.

(iv) To provide a detailed analysis of legal, ethical and social repercussion of reversible/non-reversible de-identification.

(v) To promote and facilitate the transfer of knowledge to all stakeholders (scientific community, end-users, SME)
Organization

- 28 EU/COST countries
- 3 non-COST countries (USA, China and Argentina)

http://www.cost.eu/COST_Actions/ict/Actions/IC1206
http://costic1206.uvigo.es/

Four working groups:

**WG1**: De-identification methods for biometric identifiers (55 members)

**WG2**: De-identification methods for soft- and non-biometric identifiers (40 members)

**WG3**: Applications and added value of de-identified data (25 members)

**WG4**: Ethical, bioethical, societal and legal aspects and guidelines for de-identification and reversible de-identification (15 members)
Organization

Tasks and goals:

• Creating liaisons with the other COST Actions
• Establishing links with appropriate organisations
• Organising the Action Workshops
• Organizing the Training schools
• Activation of inter-partner STSM (Short Term Scientific Missions) visits
• Presenting scientific papers at workshops and conferences
• Scientific activities related to networking in the areas of de-identification, reversible de-identification and privacy protection (for example joint research papers, special sessions, common projects)