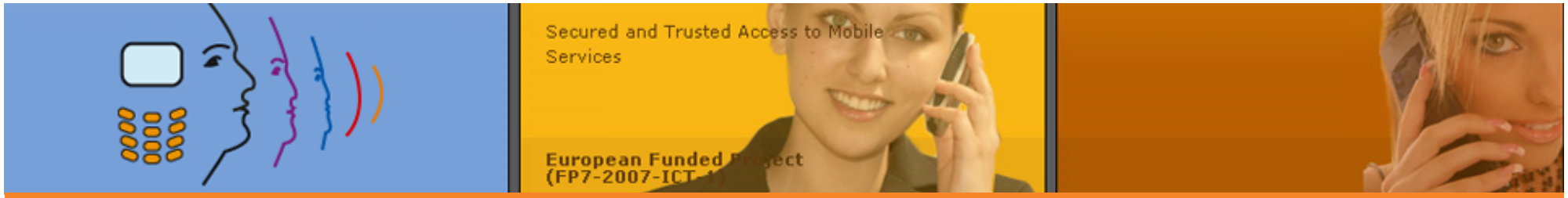
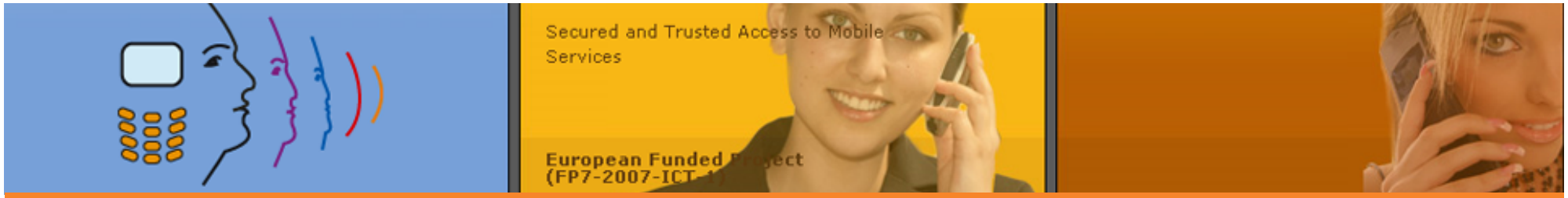
D5.1 : Scalable uni-modal systems



D5.1 : Scalable uni-modal systems

Planning

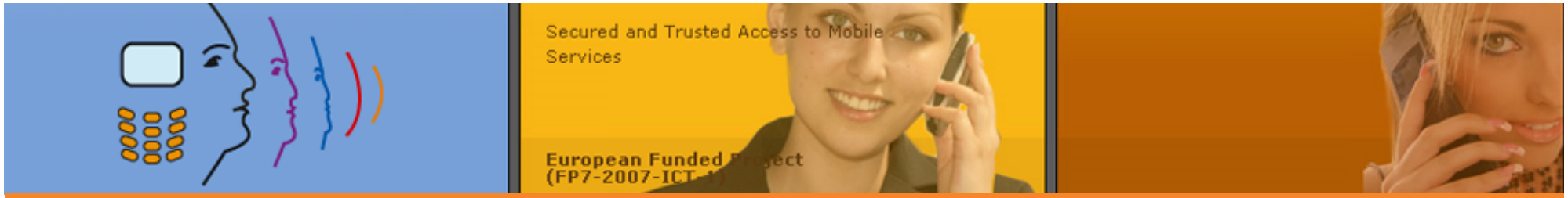
- D5.1 ready for the end of november
- 15/11/2009: Each partner upload on the SVN
  - Scalable systems
  - Report on the uni-modal scalable systems (on advance)



D5.1 : Scalable uni-modal systems

Audio Scalabilty: LIA

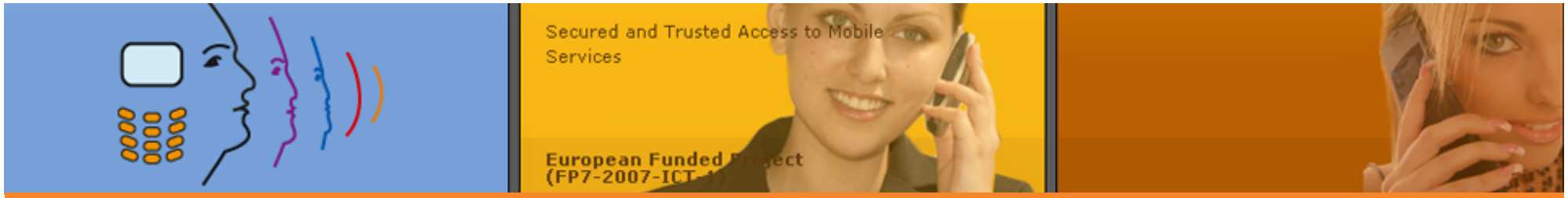
- VAD & Feature Normalization
  - GMM-based & short-term constraint
- Feature extraction
  - Limitation of size
- GMM statistics computation and scoring
  - Study of size models
  - Investigation into selection of Gaussians for GMM evaluation



D5.1 : Scalable uni-modal systems

Audio Scalabilty: BUT

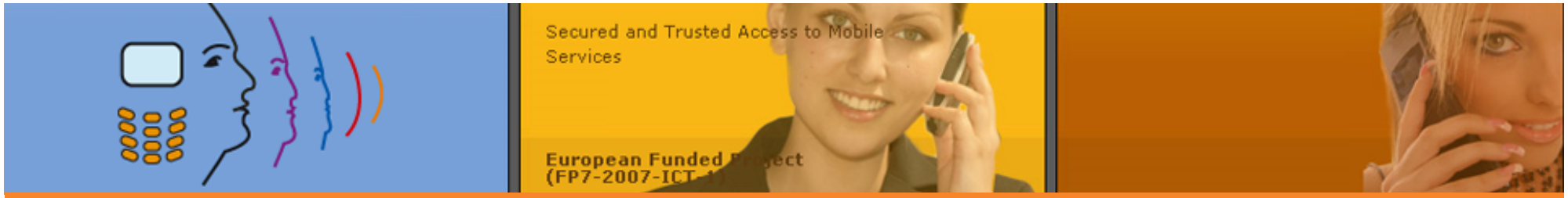
- VAD & Feature Normalization
  - ANN system & short-term constraint
- Feature extraction
  - Limitation of size
  - Frame Skiping
  - Gaussianisation
- GMM statistics computation and scoring
  - Study of size models
  - Investigation into selection of Gaussians for GMM evaluation
  - Shared covariance matrix (BUT)
  - Fast scoring (.product)



D5.1 : Scalable uni-modal systems

Face Scalabilty:

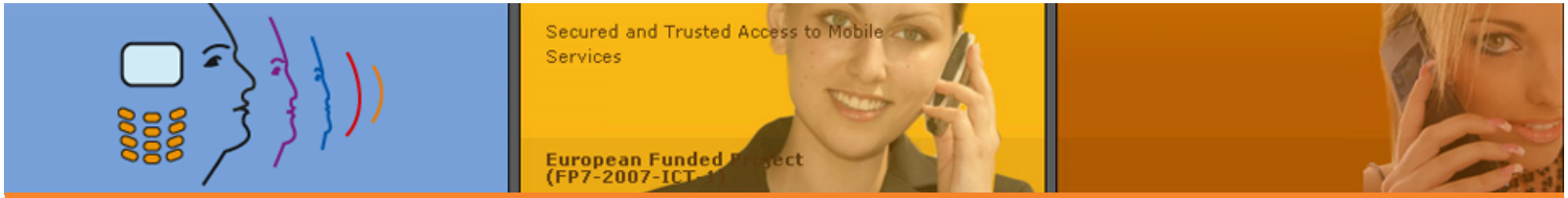
- Each module studied in isolation
- Evaluation:
  - Face Detection: BANCA
  - Face Localisation: XM2VTS
  - Face Verification: BANCA (P protocol)
- Overall performance of the three systems in a chain is provided
- Optimisation of the three systems together



D5.1 : Scalable uni-modal systems

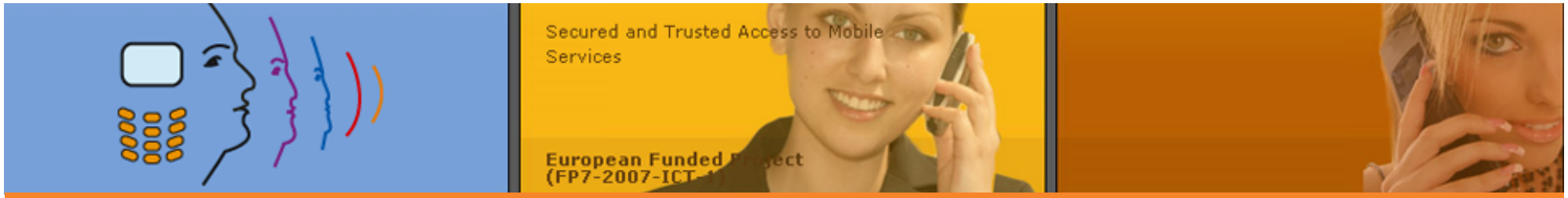
Face Detection(localisation): UOULU & Idiap

- To change the scanning parameters
  - Range of space sizes (the scales)
  - To limite the scanning windows (step sizes)
  - Frame scalability
- Simpler model: removing N cascades
- Fixed point arithmetic
- Features reduction
- Stop after detecting one face



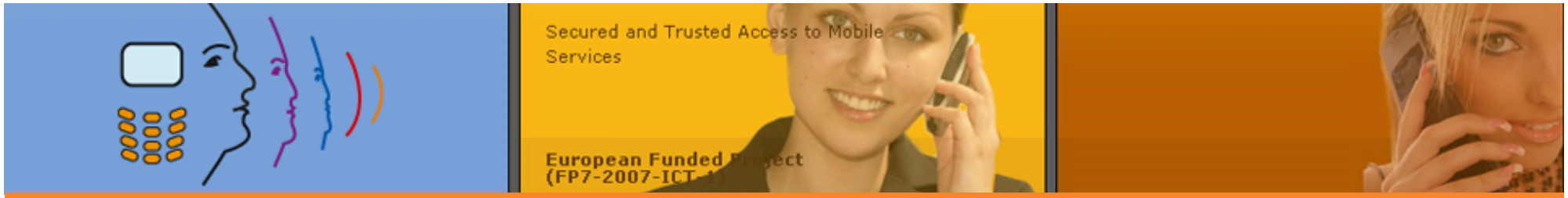
Face Localization: UMAN

- Reducing the number of points (for face modelling)
  >> imprecision for the eye centers
- Size of the template (feature patch)
- Radius of the search (if possible)
- Number of iterations before stopping (compared to method of convergence)



Face Verification: UNIS

- Reducing the number of dimension for PCA + LDA
- Replace PCA + LDA with feature selection (boosting ?)
  >> Varying the number of features
- Replacing the chi-squared similarity measures with efficient (potentialy fixed point measures) like intersection algorithms



Report content (on advance)

- Description of the systems
- Evaluation for each scalable parameter
  - Performance in terms of CPU / memory
  - Performance should be given both absolute and relative to the baseline system.
- Evaluation of the « best » system (considering all scalable parameters together)