



Biosecure

Multimodal Biometric Database



Goals today

- **Spread the word**
- **Get some feedback/help**
- **Comments on evaluations**



Participants

1st Call (Primary):

1. UPM (J. Ortega-Garcia)
2. GET (S. Salicetti)
3. UNIKENT (F. Deravi)
4. UNISS (M. Tistarelli)
5. UVIGO (C. García-Mateo)
6. UNIFRI (J. Hennebert)
7. JR (H. Ganster)
8. UNIS (J. Kittler)
9. AMSL-BIO (J. Dittmann)
(retired)

2nd Call (Additional):

1. CWI (B. Schouten)
2. BU (L. Akarun)
3. FE-UNILJ (N. Pavesic)
4. FER (S. Ribaric)
5. EPFL (A. Drygajlo)
6. UPF (A. Frangi)
7. FUB (M. Falcone)



Datasets: Overview

DS1 (Internet): Voice, face → COMMON (2 sessions minimum)

PC-based, on-line, unsupervised (Internet), 1000 donors approx., 2-3 sessions, **ALL ACQUISITION SITES**

Responsible: UVIGO (C. Garcia-Mateo)

DS2 (Desktop): Voice, face, signature, fingerprint, hand, iris → EXTENDED (2 sessions min)

PC-based, off-line, supervised, 500-700 donors approx., 2-3 sessions, **5-10 ACQUISITION SITES**

Responsible: UPM (J. Ortega-Garcia)

DS3 (Mobile): Voice, face, signature, fingerprint → EXTENDED (2 sessions min)

PDA-based, indoor/outdoor, 500-700 donors approx., **5-10 ACQUISITION SITES**

Responsible: GET (S. Garcia-Salicetti, B. Dorizzi)



Site Distribution regarding DSs

DS1(Internet): ALL (15)

DS1,DS2(Desktop): UPM, UNISS, UVIGO, JR, UNIS, FER, FE?, GET?, UPF?, FUB? → 6+4?

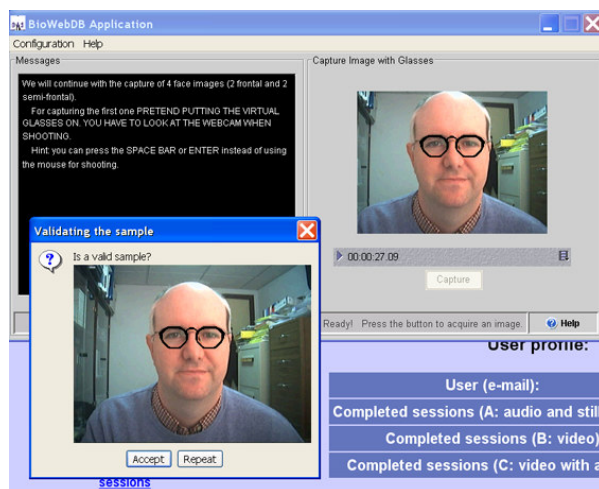
DS1,DS3(Mobile): GET, UPM, UNIKENT, UNIFRI, CWI, FE?, UNIS?, FUB?, UPF?, BU? → 5+5?

DS1,DS2,DS3: UPM, GET?, UNIS?, FUB?: 1+3?



Internet dataset (Dataset 1 -DS1)

- Acquisition software (Almost finished, UVIGO):



- EQUIPMENT: low-cost webcam acquired by each partner, e.g., Philips ToUcam Pro II





Internet dataset (Dataset 1 -DS1)

- Acquisition protocol (per session, total duration per session around 20 minutes, *COMMON to the 3 DSs*):

Mode ID	Sample ID	Data Type	Contents
I	1-2	Image	2 still frontal face images
C	1-2	AV	2 PIN codes (4 digits) (set of 100) in English
C	3-4	AV	2 PIN codes (4 digits) (set of 10) in native language
D	1	AV	Digits from 0 to 9 in English
S	1-2	AV	2 phonetically rich sentences in English
S	3-4	AV	2 phonetically rich sentences in native language

- For details see related document:
[20060607_BIOSECURE_A6DS1Spec_UVIGO.doc](#)



Desktop dataset (Dataset 2 –DS2)

- Acquisition software (Almost finished, UPM):



Desktop dataset (Dataset 2 –DS2)

• EQUIPMENT:

300 €	PHILIPS SPC 900NC (webcam) + PLANTRONICS Voyager 510 (headset)		} 4,200 € approx.
2,000 €	LG IrisAccess EOU3000		
50 €	BIOMETRIKA FX2000		
50 €	YUBEE (Atmel FingerChip)		
300 €	WACOM Intuos A6 + Inking Pen		
1,500 €	CANON EOS 30D + 2 Flashes		

Desktop dataset (Dataset 2 –DS2)

• Acquisition protocol (per session, total duration per session around 20 minutes):

Mode ID	Sample ID	Data Type	Sensor	Contents
SI	1-5	Signatures	Tablet	5 genuine of donor n
SI	6-10	Signatures	Tablet	5 dynamic imitations (up to 2 min train) of donor $n - N$ (where N is the session number)
<i>COMMON – AUDIO / VIDEO (simultaneously with the high-quality webcam and the bluetooth earbud)</i>				
IR	1-4	Iris images	Iris cam	(Right eye → Left eye) x 2 times
FO	1-12	Fingerprints	Optical	(R_thumb → R_index → R_middle → L_thumb → L_index → L_middle) x 2
FT	1-12	Fingerprints	Thermal	(R_thumb → R_index → R_middle → L_thumb → L_index → L_middle) x 2
HA	1-4	Hand	Digital camera	(Right hand → Left hand) x 2 times
FA	1-4	Face	Digital camera	2 photos without flash → 2 photos with flash (ISO-like conditions)

• For details see related document:

20060607_BIOSECURE_A6DS2Spec_UPM.doc

Mobile dataset (Dataset 3 –DS3)

- Software being developed at GET
- EQUIPMENT (2 PDAs, each one for a different part of the acquisition):

HP iPAQ hx2790

Fingerprint



500 € approx.

Qtek 9000

Camera (Face)



1,000 € approx.



NOTE: The use of a single PDA (iPAQ + FlyCam) is under investigation

Mobile dataset (Dataset 3 –DS3)

- Acquisition protocol (per session, total duration per session to be studied):

Mode ID	Place	Sample ID	Data Type	Sensor	Contents
SI	Indoor (seated)	1-5	Sign	iPAQ	5 signatures of donor n
SI	Indoor (seated)	6-10	Sign	iPAQ	5 dynamic imitations (forgeries) of donor $n - N$ (where N is the session number)
FT	Indoor (seated)	1-12	Finger	iPAQ	(R_thumb → R_index → R_middle → L_thumb → L_index → L_middle) x 2
COMMON – AUDIO / VIDEO (Qtek or iPAQ+FlyCam) – INDOOR					
SI	Outdoor (standing)	11-15	Sign	iPAQ	5 signatures of donor n
SI	Outdoor (standing)	16-20	Sign	iPAQ	5 dynamic imitations (forgeries) of donor $n - N$ (where N is the session number)
FT	Outdoor (standing)	1-12	Finger	iPAQ	(R_thumb → R_index → R_middle → L_thumb → L_index → L_middle) x 2
COMMON – AUDIO / VIDEO (Qtek or iPAQ+FlyCam) – OUTDOOR					

- For details see related document:

20060607_BIOSECURE_A6DS3Spec_GET.doc



Acquisition Agenda

- June, 9th:** final specifications of sensors, acquisition protocol, legal issues, financial aspects, ... → final written commitment to participate as acquisition sites
- June:** testing of the acquisition setup + protocol by the responsible partners (UVIGO, UPM, GET)
- Late June:** UVIGO+UPM+GET (Developers & contact persons) meet at UAM (Few days) → All supervisors meet at UAM (1 day) → Reference data for ALL SITES + information on valid/invalid samples and minimum Q
- July/August:** testing of the acquisition setup in ALL SITES with feedback to the contact persons of each dataset (UVIGO, UPM, GET)
- Sept - Dec06:** acquisition of 2 sessions by ALL SITES (DS1 continues)
- Nov06:** availability of data (1 session) from UVIGO (DS1), UPM (DS2), and GET (DS3) to be used as development data for the evaluation campaign
- End of 2006:** Announcement of the Biosecure evaluation campaign
- Jan07/Feb07:** Gathering & post-processing (at UVIGO-DS1, UPM-DS2, and GET-DS3) → final version of Biosecure MDB
- Mar07:** availability of evaluation data for the Biosecure evaluation campaign
- Sep07:** results and conclusions of the evaluation (extension of 3 months)



Donor Profile

- **DS1, DS2, DS3:** same donors for the 3 DSs
- **Number of donors:** minimum number of complete donors = 70 → recommended initial recruitment = 90 to 100 donors
- **Sessions:** 2 sessions (minimum) for each DS
- **Gender:** Balanced 50% ($\pm 10\%$)
- **Age:** 18 – 25: 35%; 25 – 40: 35%; >40: 30% ($\pm 5\%$)
- **Availability of donors during the acquisition campaign:** Sep06 – Jan07
- **English proficiency:** at least to be able to read English phrases
- **Webcam availability:** at home or work (if not, DS1 acquired on site)
- **Registration Data:** Name + Surname; age; gender; handedness; glasses/contact lenses; manual workers/users; native language
- **Native Languages:** Native Donor's Language = Native Site's Language
- **How to utter PINs:** digit by digit (not grouping)