

Provision of CBT based depression treatment on a smart phone - the ICT4Depression mobile system

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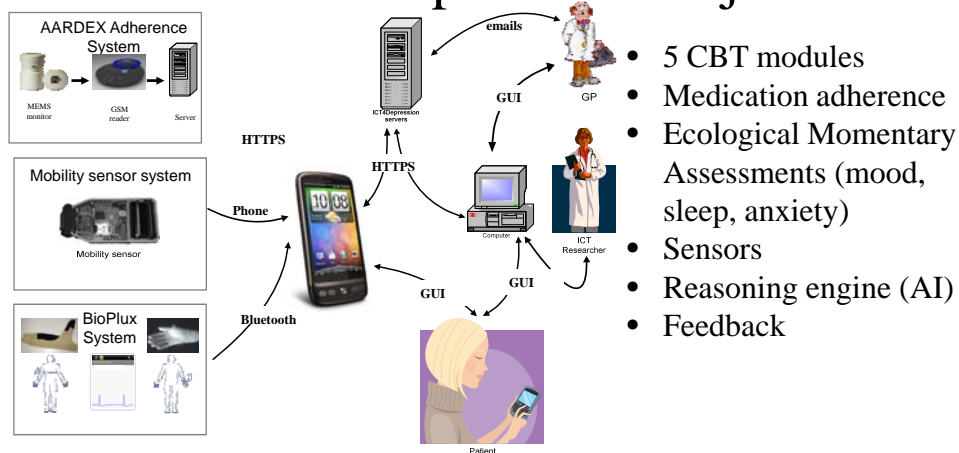
AWAL lab

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The ICT4Depression Project



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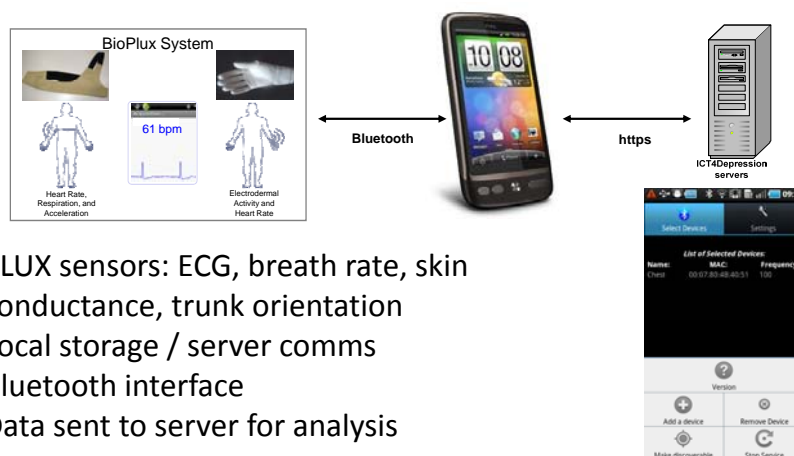
Role of smartphones in ICT4Depression

- Providing content and exercises
 - Treatment content available on phone (offline)
 - Exercises require server communications
- Ecological Momentary Assessments
- Sensor interface (Bluetooth, WIFI, cellular)
- Mobility / Physical Activity monitoring
- Unobtrusive monitoring of location

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Biomedical Sensors



- PLUX sensors: ECG, breath rate, skin conductance, trunk orientation
- Local storage / server comms
- Bluetooth interface
- Data sent to server for analysis

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Mobility Monitor

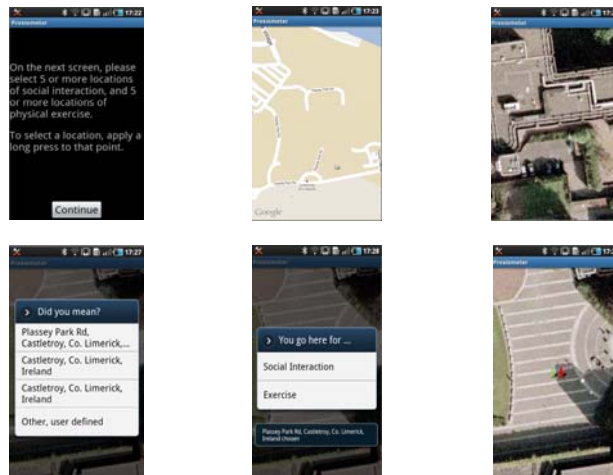
- Commercially available sensors fixed location
- Research: orientation independence
- Use of onboard accelerometer
- Processing on phone
- Trunk orientation from PLUX sensor
- Overall accuracy of 89%

	Lie/Sit	Stand	Walk	Run	Cycle
Lie/Sit	99.6	0	0.4	0	0
Stand	0	90.5	.5	0	0
Walk			86.4	13.6	0
Run	0	0	13.1	85.3	1.6
Cycle	0	0	0.1	16.7	82.2

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Proxiometer



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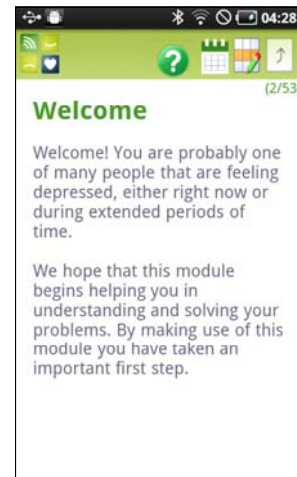
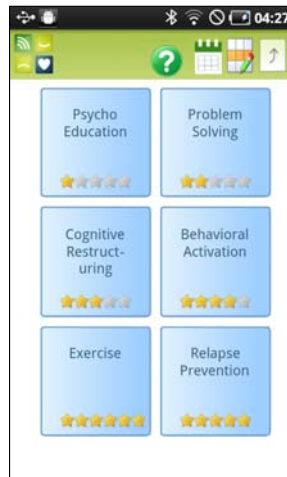


Ecological Momentary Assessments

- 5 times daily
- Rate mood, sleep and anxiety
- Scale of 1 -10

- Ratings scheduled automatically by phone based on schedule provided by server
- Rating presented again if not responded to where appropriate

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Herman: His situation (44/60)

Herman (38) has been out of work for almost seven months.

Herman felt he was becoming increasingly gloomy. Without a job to go to, he felt incomplete and no longer useful. He felt aimless and without value.

Describe at least 5 activities that you (would) like to do. Tip: Add also activities that include contacts with other people. Think also about simple activities like listening to your favourite music or reading a magazine.

Pleasant activities

Save Next Step

Choose From List

View Existing Activities

Describe the recent situation that got your mood to sink. Be as specific as possible.

View Existing

Provide details of the situation

What happened:

When did this happen?:

q w e r t y u i o p
a s d f g h j k l
↑ z x c v b n m ↵
?123 . / Next

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What platform / phone ?

Android (2012 stats)

- 68 % global market
- 79% of malware
- Majority from 3rd party appstores
- Many phones available
- Also cheap phones available

iPhone (2012 stats)

- 18 % global market
- 0.7% of malware
- Only 1 app store
- Limited phones available
- Phones relatively expensive

No easy answer. Likely best solution is to develop for both.

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