



Fraunhofer Research Center for Assistive Information and Communication Solutions

Presentation 2011

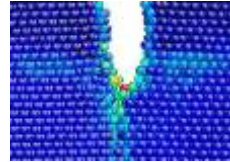
1. Fraunhofer Portugal

Institutional Background



1. Fraunhofer-Gesellschaft

Institutional Background



60 Institutes

> 80 Research Units

> 17.000 employees

€1,7 billion R&D budget

(>€1,4 billion from contract research)

7 Groups

- Information and Communication Technology
- Life Sciences
- Materials and Components
- Microelectronics
- Production
- Surface Technology and Photonics
- Defense and Security

3. Fraunhofer AICOS

Strategic Research Agenda

AAL	ICT4D
Target Groups	<ul style="list-style-type: none">▪ Ageing & Elderly (including their relatives, caretakers and communities)▪ Rural & Developing
Focus Areas	<ul style="list-style-type: none">▪ Human Computer Interaction & UX▪ Information Processing▪ Autonomic Computing

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Strategic Research Agenda – Scientific Areas

Human-Computer Interaction



Adapting
INTERACTION to
SPECIFIC USER
NEEDS

Information Processing



From RAW data ...
to MEANINGFUL
information

Autonomic Computing



SMARTER machines:
less configuration &
maintenance

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Human-Computer Interaction

- **User & Social Experience**

How an end-user feels about using a product?

- **Mobile & Future Devices**

Applications, Services, Mobile social networks, and studies on the use of non-PC Internet devices for special target groups

- **Evaluation & Usability**

A product should not get commercialized without being tested and iteratively redesigned first!

Human-Computer Interaction



Adapting
INTERACTION to
SPECIFIC USER
NEEDS

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Information Processing

- **Context Awareness**

Information specific to the current activity, situation or even mood of a person (e.g. working, feeling lonely)

- **Content Retrieval**

Search of data within multiple contexts (e.g. fall detection or prediction, health patterns)

- **Multimodal Information Fusion**

Acquisition of information by multiple sensors capturing the same reality (Fusion restores all inherent information of interest)



From RAW data ...
to MEANINGFUL
information

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Autonomic Computing

■ Architectures and Enabling Technologies

Protocols, service platforms and software architectures that enable autonomic system deployment and management (e.g. TR-069, OSGI, ...)

■ Adaptive Systems & Algorithms

Support systems that are able to adapt to time-changing and resolve unforeseen conditions (e.g. statistical modeling, adaptive control, ...)

Autonomic Computing



SMARTER machines:
less configuration &
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4. Project Examples

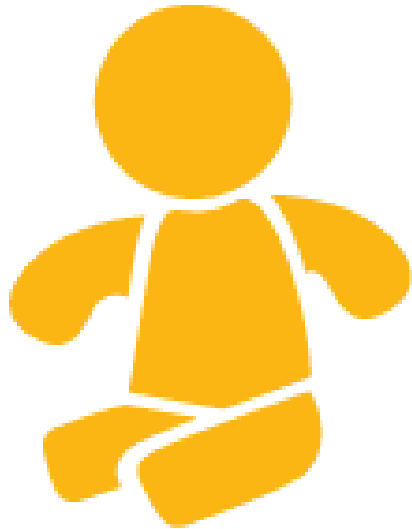
Overview

Some examples of our current projects:

- **Mover**
- **Smart Companion**
- **EMA**
- **Android 4 Development**
- **Upcoming ICT4D Projects**

4. Project Examples

Mover



Problem:

- Lack of physical movement is one of present day concerns
- Population is more and more exhibiting health problems partially caused by the their lack of movement
- People do not always find the time and motivation to do exercise

4. Project Examples

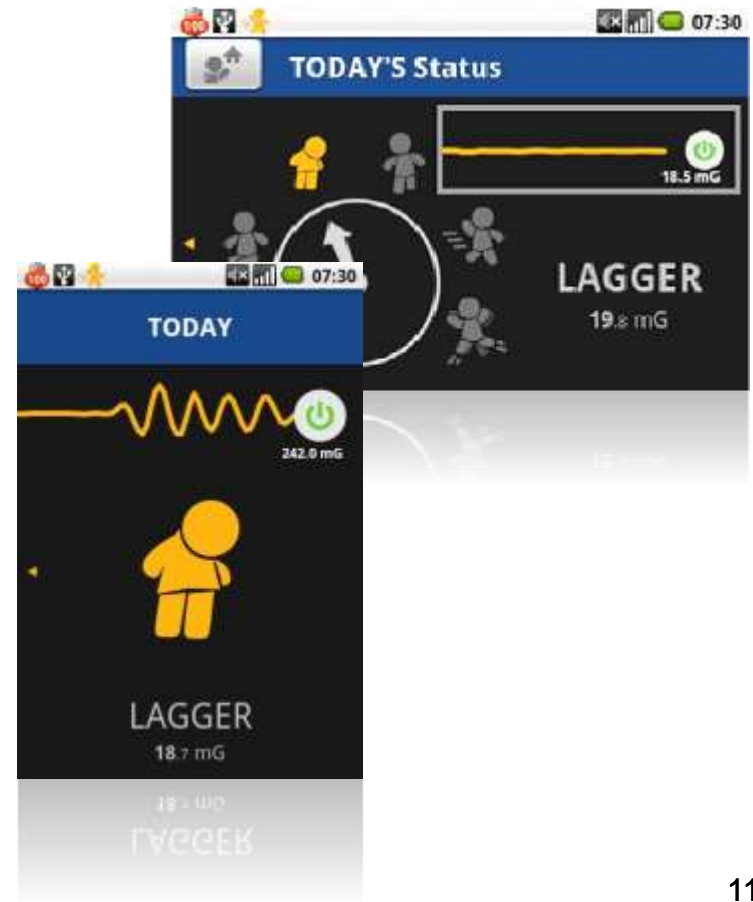
Mover



Solution:

- Tracks your activity level and helps you become more active
- Detects falls and warns via SMS and e-mail your contacts
- Compares your movement with others in the community

Ranked 5th in 2nd Android Developers Challenge Lifestyle Category



4. Project Examples

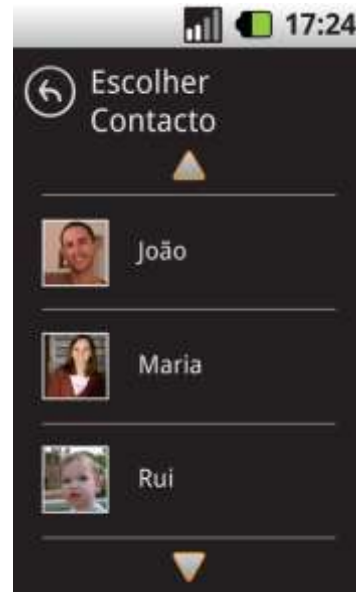
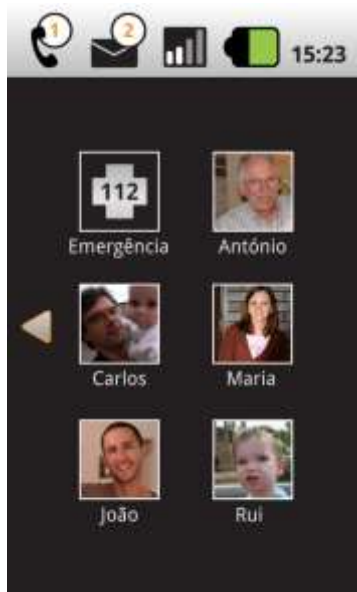
Smart Companion



- The Smart Companion is an Android customization specially designed to meet older adults' needs
- It aims at being a companion which is permanently available to help and support users in their daily actions

4. Project Examples

Smart Companion



It enables the user to easily:

- Call the emergency line
- Call friends
- Send voice and text messages
- Receive medication reminders
- ... and much more

Finalist in the competition “Zon Prémio Criatividade 2011”, in the category of “Multimedia Applications”



4. Project Examples

EMA

- A complete energy monitoring solution
- Low cost
- Easy to deploy regardless of home footprint
- User-friendly interface
- Modular design
- Use of existing infrastructure for communication
- Visualization on any Internet connected device

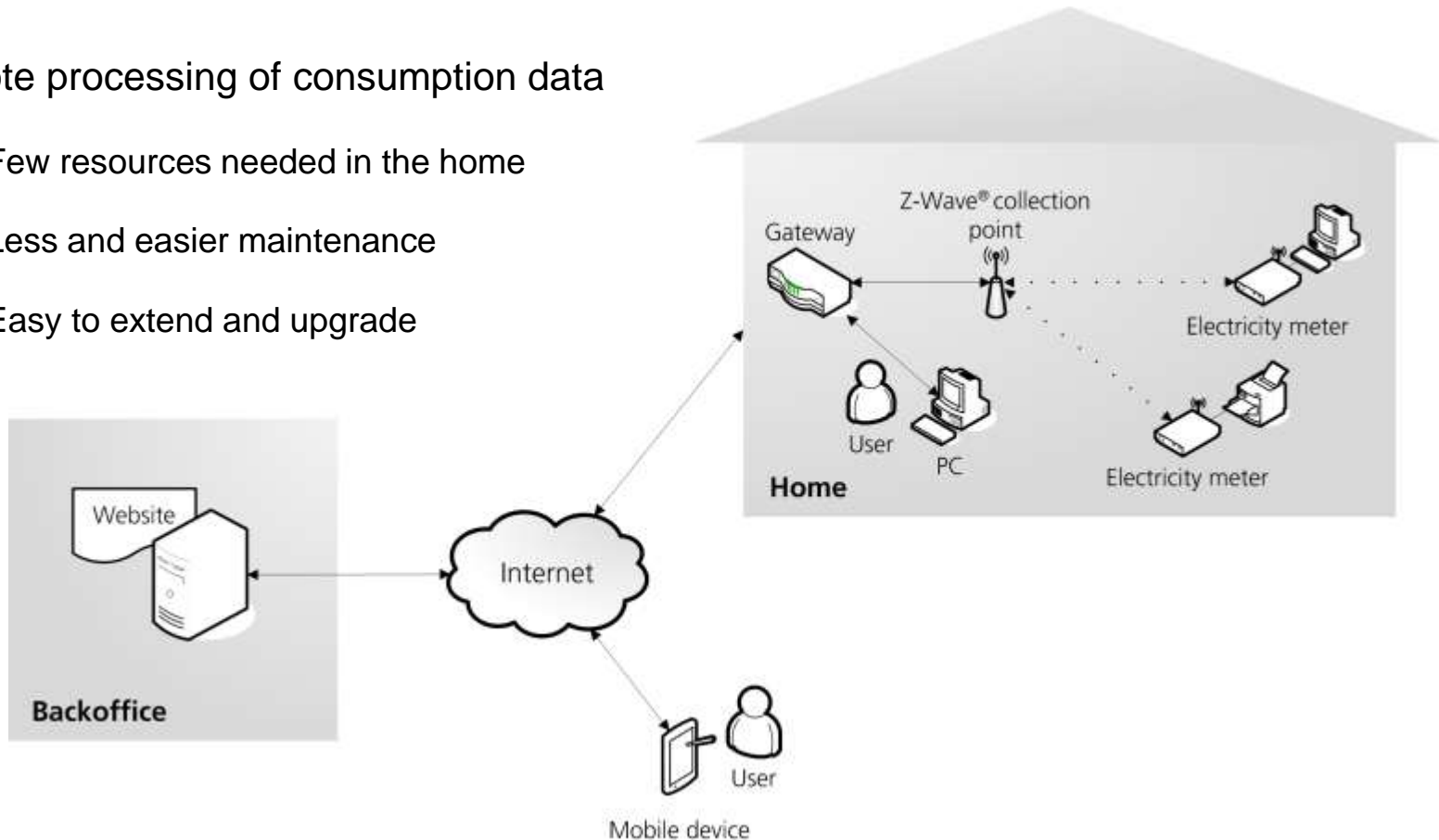


4. Project Examples

EMA

■ Remote processing of consumption data

- Few resources needed in the home
- Less and easier maintenance
- Easy to extend and upgrade



4. Project Examples

A4D - Android for Developing



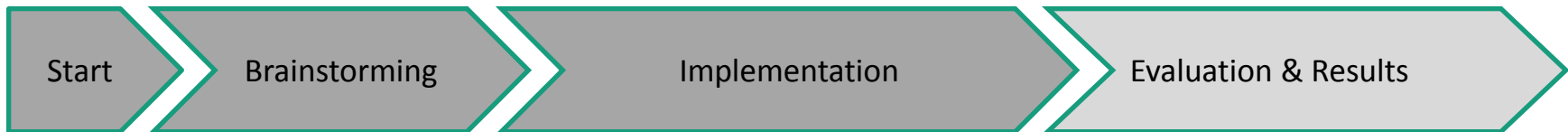
A4D – Android for Developing – is an initiative promoted by Fraunhofer Portugal AICOS in Mozambique aiming to transfer know-how on the development of applications and services based on the Android OS specifically to the African mobile market.

Involved Partners:



4. Project Examples

A4D - Android for Developing



- FhP-AICOS invitation for involvement of UEM, PT Inovação and SAP Research SA
- Generating a pool of initial ideas and concepts for applications:
 - 25 proposals generated
 - 4 selected by the Jury

- Preparation of a work plan for each project
- Technical Workshop – Android training session at Universidade Eduardo Mondlane
- Financial, equipment and technical support during the project execution

- Evaluation of the final projects by a jury formed by FhP-AICOS, UEM, PT Inovação and SAP Research SA
- Results dissemination – the winning projects are presented at AFRICOMM by the students
- Establishing contacts with potential sponsors/partners for further exploitation of the results

4. Project Examples

Upcoming ICT4D Projects

- Mobile solutions for agriculture, health, governmental / citizen services and for micro-enterprises:
 - Sensor-based applications for mobile devices, e.g. in the area of health, agricultural processing or supply chain management
 - Simplified Graphical User Interfaces (GUIs) for users with little or no experience with mobile devices, e.g. also suitable for illiterate users
 - Interactive Voice Response (IVR) applications which can be accessed by any low-end phone and can be used by people with any level of literacy
 - Solutions for offline-capable smartphone applications for areas with insufficient or intermittent network coverage

5. Fraunhofer AICOS Services

What can we do for you?

■ R&D Consulting

- Propose new solutions and ideas for evolving your products and services

■ Proof of Concepts

- Initial implementation for proving that new ideas really work

■ Prototype Implementation

- Architectural specification
- System implementation
- System testing and validation

■ Easy access to German Fraunhofer Institutes in other Areas of Competence

■ Member of Scientific National System (thus eligible to participate in public incentive R&D programs)

5. Fraunhofer AICOS Services

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