ALADDIN project

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Institute of Communication and Computer Systems
## ALADDIN at a glance

<table>
<thead>
<tr>
<th>Title</th>
<th>A technology platform for the Assisted living of Dementia elDerly INdividuals and their carers</th>
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<tbody>
<tr>
<td>Project reference</td>
<td>aal-2008-1-061</td>
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<tr>
<td>Duration</td>
<td>27 months</td>
</tr>
<tr>
<td>Partners</td>
<td>8</td>
</tr>
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<td>Countries</td>
<td>5 EU member states</td>
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<tr>
<td>Budget</td>
<td>€ 1,980,756,97</td>
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<tr>
<td>Funding</td>
<td>€ 1,480,021,00</td>
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What is dementia?

[...] a loss of memory plus impairment in at least one other cognitive function, such as aphasia, apraxia, agnosia and disturbance in executive function [...] 

It is clinically manifested in 3 main symptomatic domains:

- Activities – inability to perform activities of daily life
- Behaviours – psychiatric symptoms/behavioural disturbances
- Cognition – neuropsychological impairments
Dementia epidemiology

- Alzheimer’s disease 50-60%
- Vascular dementia 30-40% (including about 20% where dual pathology exists)

30% in Europe!
Socioeconomic aspects

40% reside in special care settings
  ⇒ Increased cost of care

60% live in the community
  ⇒ Inducing a significant burden to their informal caregivers

  ➢ Absenteeism from work
  ➢ Stress, over-work, depression
  ➢ Physical illness
  ➢ Cost
What is required?

Novel healthcare provision mechanisms allowing for

- Delayed institutionalisation of the patients AND
- Relief of distress to the caregivers
ALADDIN overall objective

To utilise state-of-the-art in ICT in order to develop an integrated solution for the self-management of dementia, supporting both patients and informal caregivers in this procedure
Patient generated records

- Monitoring parameters (blood pressure, weight, ECG, activity levels, sleep features)
- Cognitive, behavioural & daily living assessment (neurophysiological tests like MMSE, NPI, ADL Basic ..., questionnaires)
- Medication follow-up and drug adverse events

+ Caregiver monitoring
System components & core functions

- **Data Monitoring**
  - Collect Monitoring Parameters
  - Propagate Alarms

- **Data Repository**
  - Data Storage
  - Data replication

- **Risk Assessment**
  - Adverse event detection / prediction
  - Risk Profile creation
  - Notifications

- **Information aggregation**
  - Data representation
  - Decision Support

- **Social Networking Utilities**

- **Interfaces to existing systems (EHR, HIS... etc)**

- **Security Features**
ALADDIN architecture
Visionary results

- Efficient patient follow-up
- Timely detection of decline symptoms
- Adaptive care / personalised intervention
- Networking / socialisation / education / cognitive stimulation
- Distress relief / prevention to the carer
- Decision support tools to the therapist
ALADDIN consortium

Institute of Communication & Computer Systems, Greece

Fraunhofer-Institute for Open Communication Systems, Germany

Alma Mater Studiorum-Universita di Bologna, Italy

Psychiatric Hospital Of Attica, Greece

The National Hospital for Neurology & Neurosurgery, United Kingdom

Badalona Serveis Assistencials, Spain

ATOS Origin, Spain

Aethia Srl, Italy
ALADDIN competences

<table>
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<tr>
<th>R&amp;D Providers</th>
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<tbody>
<tr>
<td>research institutions with complementary expertise on e-health, biomedical engineering, clinical psychiatry and ICT</td>
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<th>Technology Providers</th>
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<tbody>
<tr>
<td>commercial companies providing the necessary technologies in the project, i.e. semantic &amp; services eng., open source &amp; S/W eng., information management, security, e-health platforms</td>
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<th>Pilot Sites</th>
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<tr>
<td>psychiatric / neurological hospitals and elderly-care structures experienced in dementia diagnosis and follow-up, with awareness in EU policies and regulations, involvement in regional and European projects, appropriate IT infrastructure and ICT expertise</td>
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ALADDIN competences

R&D Providers
- FOKUS
- ICCS
- UniBo

Technology Providers
- ATOS
- AETHIA

Pilot Sites
- DAFNI
- NHNN
- BSA

1 October 2009
Work planning

System analysis & design → M15

Development, integration & interfacing → M27

Trial phase Pilot operation & assessment

MGT, Dissemination & Exploitation
Exploitation

1 October 2009 AAL Forum ’09
thank you!