

# IS4ALL (IST-1999-14101) Information Society for all

Prof. Constantine Stephanidis

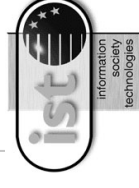
Human Computer Interaction & Assistive Technologies Laboratory  
ICS-FORTH & University of Crete

*Presented by*

D. Akoumianakis, Ph.D  
ICS-FORTH



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# Outline

- ◆ Project overview
- ◆ Universal access
  - in general and
  - in health telematics
- ◆ Electronic Patient Records in IS4ALL
  - issues relevant for IS4ALL
  - progress to date

# IS4ALL (IST-1999-14101)

What it is...

- ◆ A Thematic Network (Working Group) establishing a wide, interdisciplinary and closely collaborating network of experts to provide the European Health Telematics industry with a comprehensive code of practice on how to appropriate the benefits of universal design
- ◆ Not an RTD project

# Information Society for All

## Main concepts in IS4ALL

- Universal access
  - ◆ The right of all citizens to obtain and maintain access to a society-wide pool of information resources in different contexts of use
- Universal design
  - ◆ The conscious and systematic effort to proactively apply principles and methods and employ appropriate tools in order to develop products and services which are accessible and usable by all citizens
- Focus on Health Telematics
  - ◆ Interaction with Electronic Patient Records
  - ◆ Diversity in users, interaction platforms and contexts of use

# International Scientific Forum (ISF)

- ◆ An international network of experts for
  - discussion
  - exchange of experience & practice
  - collaboration
- ◆ Overall objective
  - promote the establishment of a favourable environment for the creation of an Information Society acceptable to all citizens

# ISF (Cont.)

- ◆ Three meetings
  - San Francisco, USA, 1997 (1st meeting)
  - Crete, Greece, 1998 (2nd meeting)
  - Munich, Germany, 1999 (3rd meeting)
- ◆ Two white papers
  - Common vocabulary
  - Research agenda
  - Contribution to the EC IST Programme (CPAs)
- ◆ Foundation for IS4ALL

# IS4ALL

- ◆ The proposal was prepared and finalized during the 3<sup>rd</sup> ISF meeting
- ◆ Project kick-off meeting on 1/10/2001
- ◆ Project duration is 3 years
- ◆ Long term view is to sustain the network beyond IS4ALL lifecycle and extend it with new members

# IS4ALL focus

- ◆ Universal access in Health Telematics
  - Electronic Patient Records
- ◆ New and emerging technologies
  - Desktop
  - Mobile devices
  - Network attachable terminals
- ◆ Novel contexts of use
  - The hospital
  - The ward
  - The home



# Specific emphasis

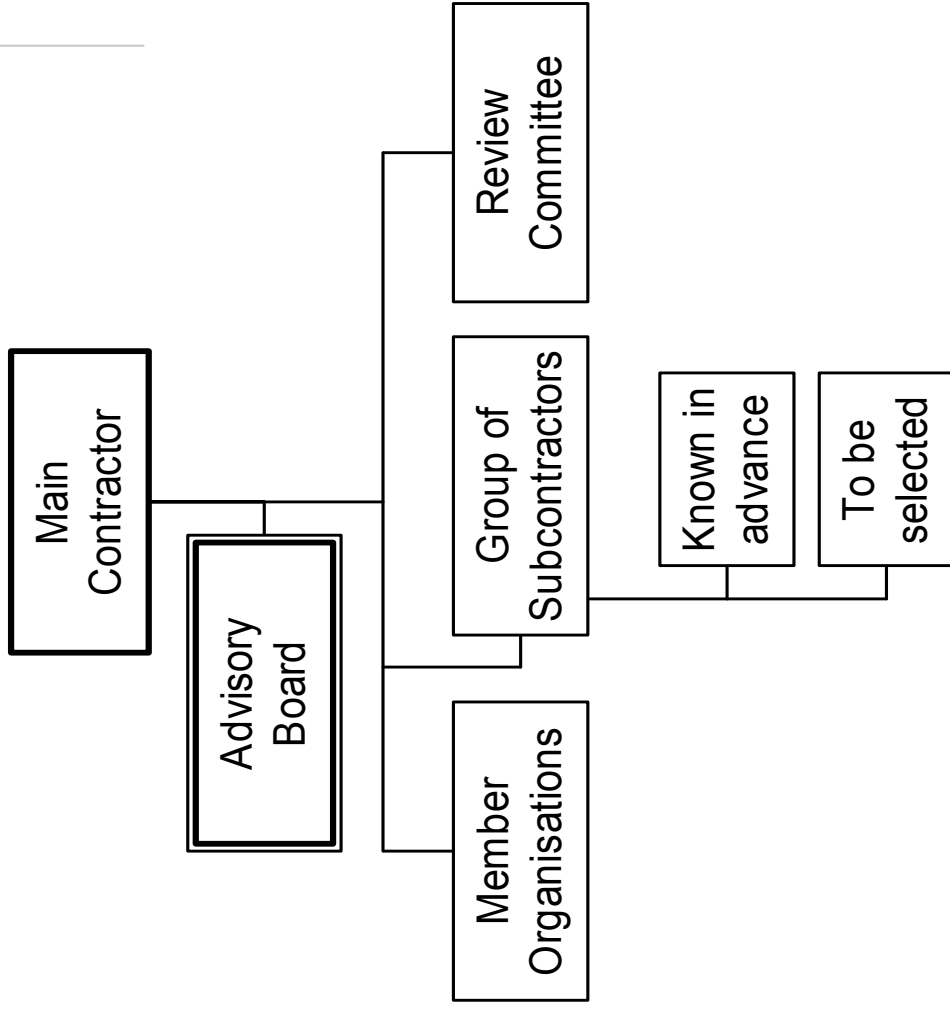
- ◆ Universal access as a quality attribute with functional and non-functional implications
- ◆ IS4ALL focuses on non-functional aspects:
  - interaction design
  - the processes involved

# Aims and objectives of IS4ALL

- ◆ Four main objectives:
  - **Consolidate** existing knowledge on Universal Access in the context of IST into a comprehensive code of design practice
  - **Translate** the consolidated wisdom to concrete recommendations for Health Telematics
  - **Demonstrate** the validity and applicability of the recommendations (through implementation of concrete scenarios)
  - **Promote** the Universal Access principles and practice in Health Telematics

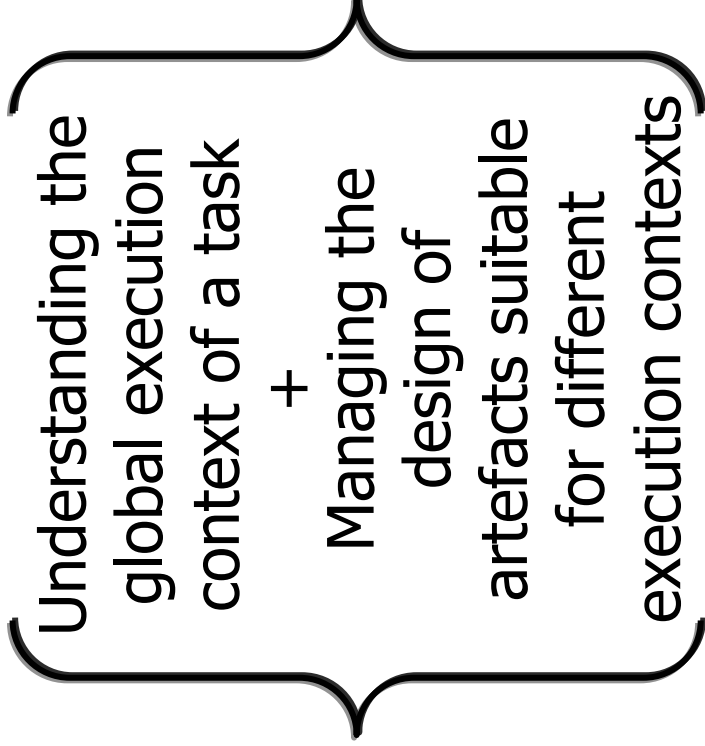
# Consortium

- ◆ Single contractor
  - FORTH-ICS, Greece
- ◆ Membership
  - CNR-IROE, Italy
  - FhG-FIT (formerly GMD), Germany
  - INRIA, France
  - FhG-IAO, Germany
  - EHTEL Association, Belgium
  - MS-HUGE, Belgium



# Designing for universal access

Designing for  
Universal =  
Access



- ◆ Designers need support to
  - gain insight of a task's global execution context
  - design alternative styles
  - manage the variety of styles

# Data being collected

- ◆ Data collection focus
  - Universal design methods and techniques developed and validated in various disciplines
    - ◆ Human Computer Interaction
    - ◆ Architecture
    - ◆ Industrial engineering
  - Health Telematics requirements for universal access
    - ◆ Electronic Health Records
    - ◆ Usage scenarios

# Data collection approach

	Sub-contract	Literature Review	Interview template	Focused meetings	Short visits	Scenario
User-centred design		✓	✓			
Unified design		✓	✓			HYGEIANet
Accessibility filters		✓	✓			WARDINHAND
Universal design principles		✓	✓			
Model-based development	UniLINZ	✓	✓			Austria
Participatory approaches	EMPIRICA	✓	✓			
USERfit		✓	✓			
Cognitive models		✓	✓			
User modelling		✓	✓			
Usability evaluation		✓	✓			
Standards		✓	✓	ISO, CEN/ISSS		
Guidelines	Pisa, UCL	✓	✓			Italy

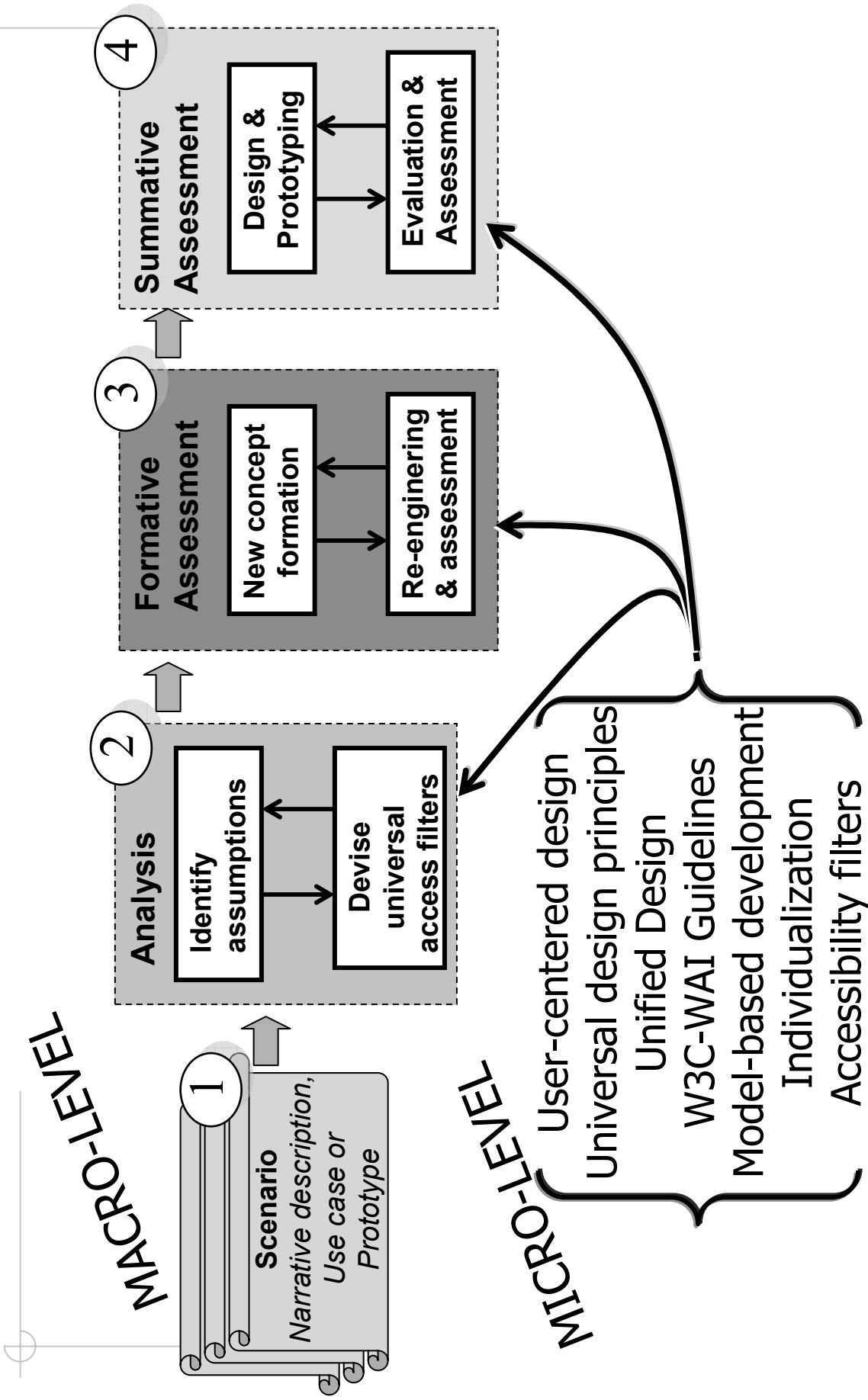
<b>Problem being addressed</b>	
<b>Device (technique, tool or representation) used to address the challenge</b>	
<b>Procedure for using the device</b>	
<b>Outcomes</b>	
<b>Underlying assumptions</b>	
<b>Practical example (I.e. an interface mock up or a process outline)</b>	

# Health Telematics data collection

- ◆ Scenarios as instruments for data collection
  - A scenario refers to a description of a possible set of events that might reasonably take place in a Health Telematics context
- ◆ A complete scenario should:
  - aim at a purpose, i.e., universal access
  - be expressed in a form, e.g., narrative, (semi) formal notation
  - it should provide content to describe
    - ◆ the context of use of an activity and where / how it is carried out
    - ◆ the platforms in place (or the artifact)
    - ◆ the target users



# Tentative process model

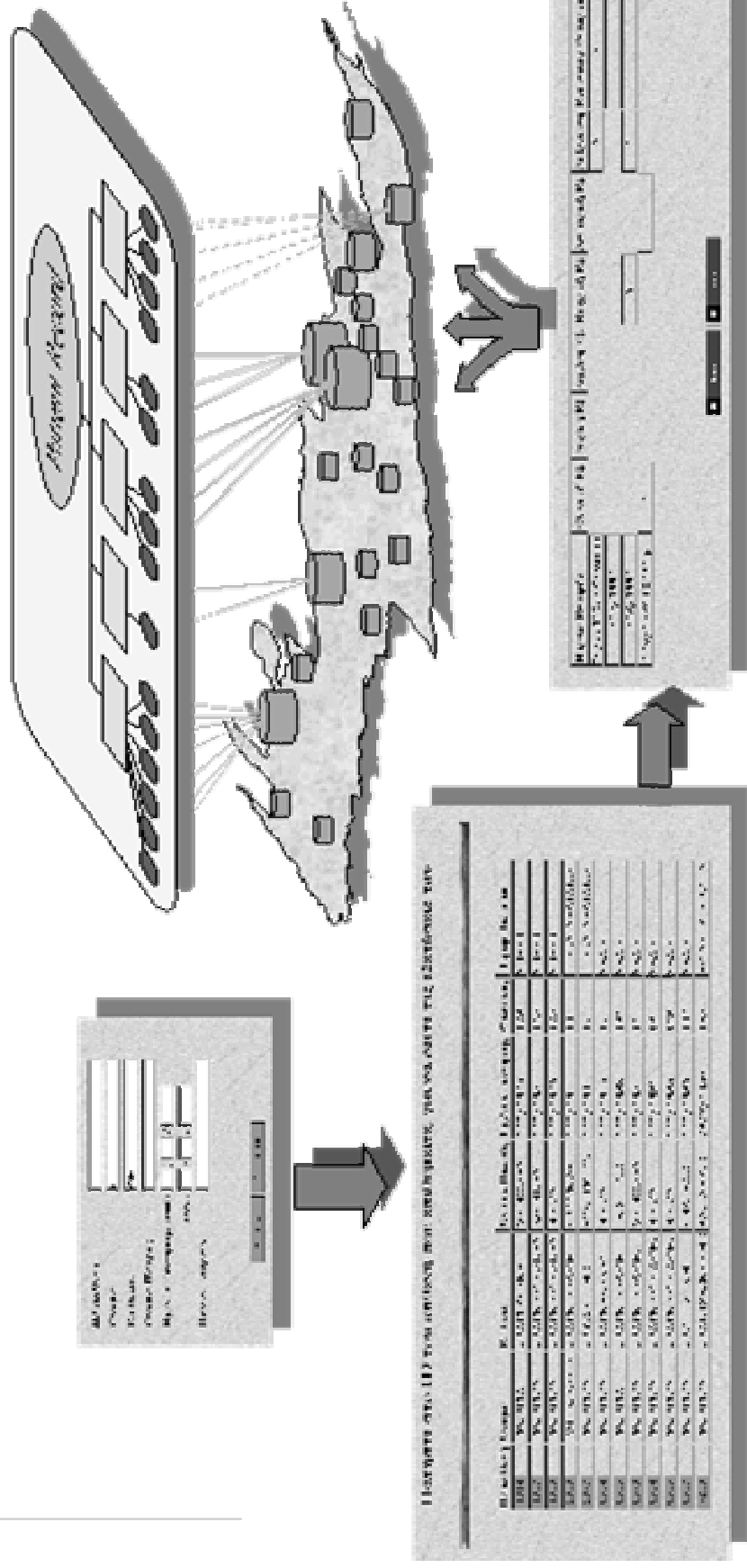


# Progress to date

- ◆ Three main scenarios
  - HYGEIAnet
  - WARD-IN-HAND
  - MediBRIDGE/C-CARE
- ◆ Additional scenarios are being negotiated in the context of subcontracting activities

# HYGEIAnet

## ◆ Regional Health Telematics Network



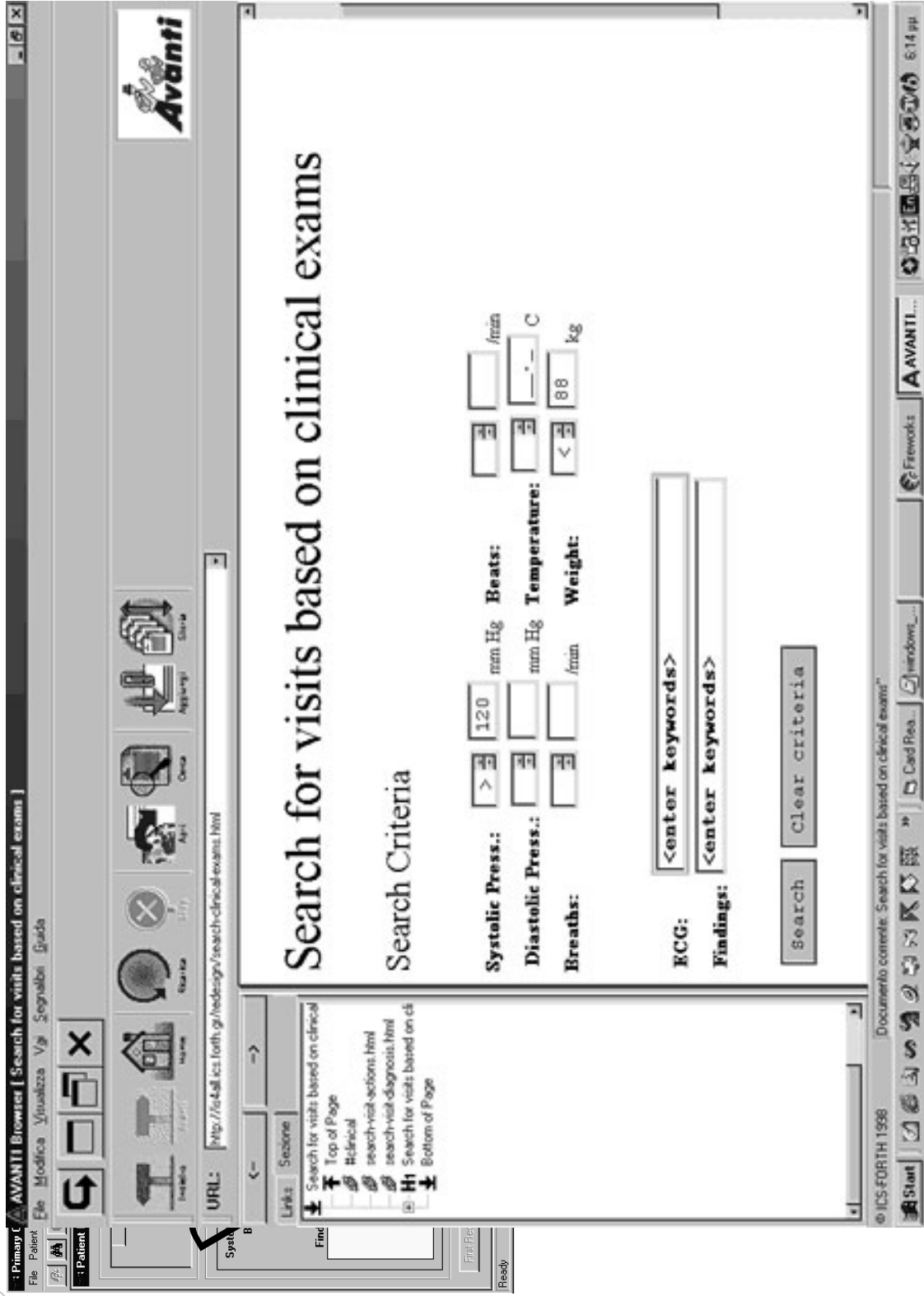
# HYGEIAnet

## ◆ The HYGEIAnet Virtual Electronic Patient

### Record on

- ... the desktop
- ... the WWW
- ... the iPAQ
- ... the WAP phone

# Examples – Searching the EPR



# Examples – Review history

**Patient: Stathiakis Nikolaos**

Patient Data  
 Name: Stathiakis Nikolaos    Father Name: Dimitrios    Birth Date: 27/3/70  
 Perif. Doctor Office: Anogeia    Folder no.: K08-978

Demogr.    History    Visit    Clin.    Gyn.    Blood    Bioch.    Radiol.    Diagn.    Action    Emerg.

Visits to PHCC (8)

Date of Visit	Clinic	Blood	Bioch.	Radiol.	Diag.	Action	Emergency
24/6/2001 15:44							
20/6/2001 22:05	!						
12/3/2001 12:00		✓				•	•
11/2/2001 18:23						•	•
13/1/2001 09:03							•
28/9/2000 08:12	✓					•	•
15/8/2000 12:14							
10/2/2000 11:40		!				•	

First Visit    Previous Visit    Next Visit    Last Visit    E-mail...

Legend  
 ✓ : exam. with negative results    ! : exam. with positive results    • : available

**Patient: Stathiakis Niko 2:36p** (ok)

Patient Data  
 Name: Stathiakis Nikolaos    Birth Date: 27/3/70  
 Father Name: Dimitrios    Folder no: K08-978  
 Perif: Doctor Office: Anogeia

Visit    Clin.    Gyn.    Blood    Bioch.    Radiol.    Diagn.    Action    Emerg.

Demogr.    History    Action

Date of Visit	Ci	Bl	Bi	Rd	Dg	Ac	Em
20/6/2001 22:05	!			!	•		
12/3/2001 12:00		✓				•	•
11/2/2001 18:23					•	•	
13/1/2001 09:03		✓	!				•

First View    Previous    Next    Last Visit    e-mail

Legend  
 ✓ : exam. with negative results    ! : exam. with positive results    • : available

# Example - Review demographics

Demographic Data [Stathiakis Nikolaos]

Demographics

Conditions of Residence

Family name	Stathiakis	Given name	Nikolaos	Parent name	Dimitrios
Birthdate:	29/4/1970	Doctor Office:	Anogia	Record	K08-978
Gender	Male	Nationality	Greece	First visit date	
Birth town	Anogia	Birth prov.	Perthi	Street	
Resid. Town	Anogia	Resid. province	Perthi	Postal code	
Telephone		Occupation		Financial status	Average
Marital status	Single	Number of assur.		Education	
Assur. Organiz.	IKA	Donor	<input checked="" type="checkbox"/>	Date of change	
Blood type	O+	Change of state		Comments	



# Expected outcomes

- ◆ **Process-oriented guidance on universal access in Health Telematics (macro-level)**
  - High level principles
  - Focus on understanding the global execution context of a task
- ◆ **Design techniques and methods (micro-level)**
  - How to approach specific design targets i.e., requirements analysis, user interface design, evaluation, etc.



# Concluding remarks

- ◆ IS4ALL gained international visibility and recognition
  - Wide interest from various projects, organizations, etc.
- ◆ The project's tangible impact is beginning to show
- ◆ The next twelve months will concentrate on reaching specific target communities in Health Telematics through a series of seminars, workshops and a variety of outreach activities
- ◆ More information available from <http://is4all.ics.forth.gr/>