

The logo for 'eGadgets' features a stylized lowercase 'e' in green with a black outline, followed by the word 'Gadgets' in a bold, black, sans-serif font. The 'G' is also in black. The entire logo is set against a light green, rounded rectangular background with a subtle gradient and a slight shadow.

eGadgets

A decorative graphic on the left side of the slide, consisting of a vertical black line intersected by a horizontal black line. To the left of the vertical line are three overlapping squares: a green one on top, a red one in the middle, and a blue one at the bottom. To the right of the horizontal line is a long, thin, light gray horizontal bar that extends across the width of the slide.

Extrovert gadgets

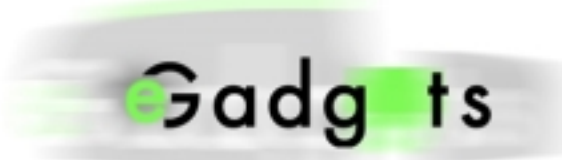
Dr. Achilles D. Kameas  
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Greece



# Terminology

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- Gadget
  - an everyday tangible (physical) object enhanced with perception, intelligence, processing and communication abilities
  - all gadgets are GAS-aware artifacts used as tangible components to form gadgetworlds
  - any gadget is of dual nature: it has
    - a physical existence (demonstrated by its form and shape) and
    - an informational existence (implemented by a HW part and a set of SW modules)




Gadgets



## Terminology (2)

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- Gadgetworld (gw)
  - is a configuration of gadgets which communicate and / or collaborate in order to display a collective function
  - is formed by coupling gadget plugs
  - all gw are GAS-compatible
  - we are interested mostly in the so-called "meaningful" gw, which are formed by a user to explicitly serve a purpose
  - a gw is an open system



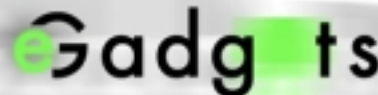
Gadgets



# Aims

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- To define a Gadgetware Architectural Style (GAS), which will
  - Be adopted by users and designers of gadgetworlds
  - Provide the infrastructure for the formation and operation of gadgetworlds
- To develop sample GAS aware gadgets
- To design evaluation scenaria




Gadgets



# GAS

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- GAS consists of
  - A set of architecture descriptions (syntactic domain)
  - A set of guidelines for their interpretation (semantic domain)
  - A set of mappings from the syntactic domain to the semantic domain
  - A set of constraints or rules that represent the application domain



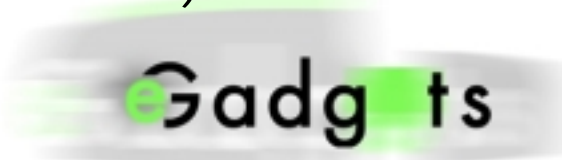
Gadgets



# Partners

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- Computer Technology Institute, GR
  - Design of GAS, design & development of protocol and platform sw, scenarios of use (design)
- University of Essex, UK
  - Design and development of gadget and platform intelligence layer, scenarios of use (implementation)
- National Microelectronics Research Center, IRL
  - Design and development of gadgets, scenarios of use (implementation)




Gadgets



# Focus

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- Emerging behavior of gadgets, which is manifested when they participate in a gw
- The concept of dynamically constructed gw
- User-gadget, gadget-gadget and user-gw interaction
- Definition of a “protocol stack” to implement GAS and implementation of a platform to support it



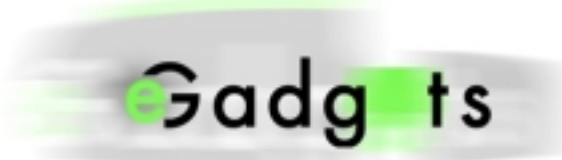
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# Issues

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- What is a gadgetworld? Who needs one? How is it represented?
- Is it feasible to define a style? How can it be done?
- Which types of interaction will be supported?
- How should actions be modeled? How will they be perceived?



Gadgets





## Issues (2)

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- If
  - Gadgets are everyday objects enhanced with a hw/sw part
  - People should not have to use new objects, but existing ones enhanced with new affordances
- Then
  - Which are the consequences in the design and use of gadgets?


Gadgets



## Issues (3)

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- Communication technology (wire / wireless, which protocol?)
- Layers of protocol stack that implements GAS (independence between layers)
- Hw components to be added to gadgets (size, power, consumption, architecture, packaging)
- Sw for GAS platform and artifacts
- Intelligence (where? Shall we use agents?)
- Control (centralized / distributed)
- Persistence, security, privacy, safety etc.




Gadgets



# Plan

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- Three year-long design / development cycles
- Research at the start of each
- Evaluation at the end of each by
  - People
  - Experts
- Frequent interaction among partners
- Two scenarios:
  - Fixed: a student's dormitory
  - Portable: part of his desk or bookcase (shelf)




Gadgets



# Activities

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- Meetings (five so far), discussions & videoconferences
- Scenario workshop
- Workshop on “physical vs cognitive disappearance of computers” @ i3 spring days 2001
- Press publicity
- Papers @ UbiComp2001 & PC-HCI2001
- Web site (new): [www.extrovert-gadgets.net](http://www.extrovert-gadgets.net)




Gadgets



# Progress

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- Report on scenarios
- State-of-the-art report (draft)
- GAS vocabulary (draft)
- Specification of gadgets (draft)
- Student's dormitory (partially constructed)
- Gadgets (prototypes under development)



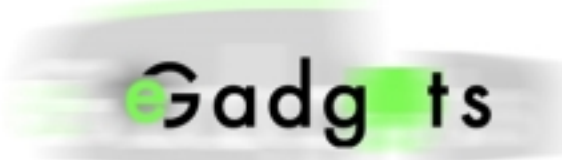
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# Collaboration possibilities

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- With other dc projects in order to:
  - Receive input on actions to be supported
  - Adopt and evaluate instances of GAS
  - Develop GAS-aware artifacts
- With research groups worldwide
- Application for troubadour and atelier grants
- Organize series of workshops on open issues
- Submit new proposals on unresolved aspects



Gadgets