Accessible and Assistive ICT

FP7 Policies and Research

European Commission,
DG Information Society and Media
ICT for Inclusion

Dr Rolf Riemenschneider

Outline

- Research & Policies

- Research & Innovation

- Challenge 7 :
  - *Embedded Accessibility of Future ICT*

- *Call 4 - Facts*

Overcoming social and economic exclusion and addressing demographic ageing through ICT innovation.
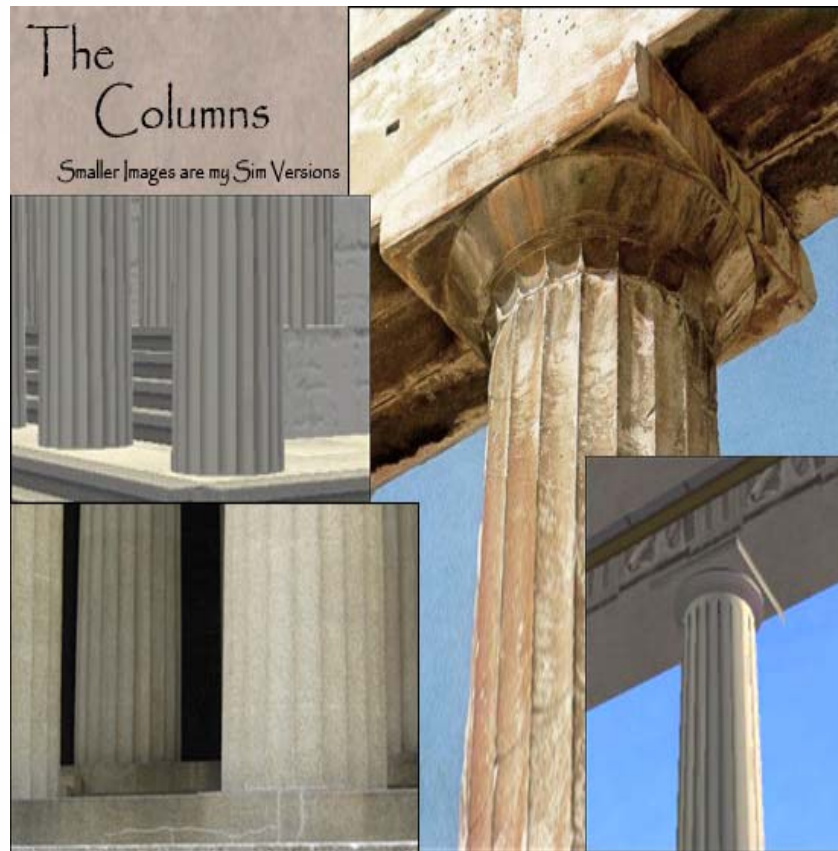
www.aal-europe.eu

http://ec.europa.eu/einclusion

http://ec.europa.eu/ict_psp

Inclusive ICT becomes affordable, mainstreaming

Inclusive services, Skills & Welfare ICT

Welfare Technologies

Intelligent & inclusive applications & services

ICT Skills, Creativity, open innovation

Challenge 7: ICT for Independent Living, Inclusion and Governance

Objective

Challenges

Outcome

Opportunities

Integration & Empowerment of Individuals
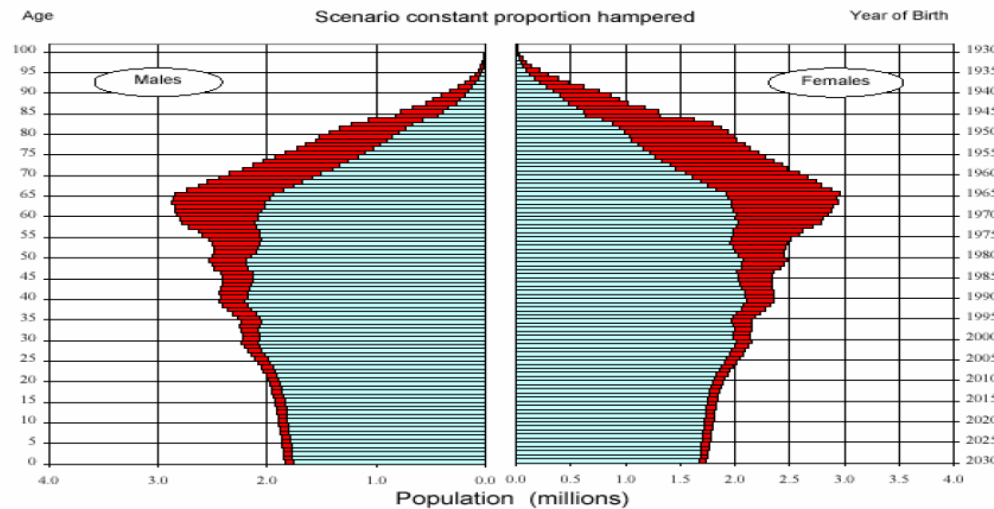
→

Participation for All

- 30% non-users
- Aging Population
- Inaccessible or expensive ICT

→

- Societal challenges for
  - Social care and health sytems
  - Work and retirement
- New Markets
- Better Accessibility

European Union, 2030, Total and Hampered Population

Scenario constant proportion hampered

Age

Year of Birth

Males

Females

Population (millions)

European Commission
Information Society and Media

Industrial Relevance

Industry

- ICT has major catalytic role on Inclusion and Participation
- Major global market opportunity 20B€+/year
- Accessibility attracts mainstream ICT

Policies

- Demographic Change
- i2010 flagship on ICT and Ageing
- Action plan Ageing Well
- Riga Ministerial Declaration, 2006
- eAccessibility Communication
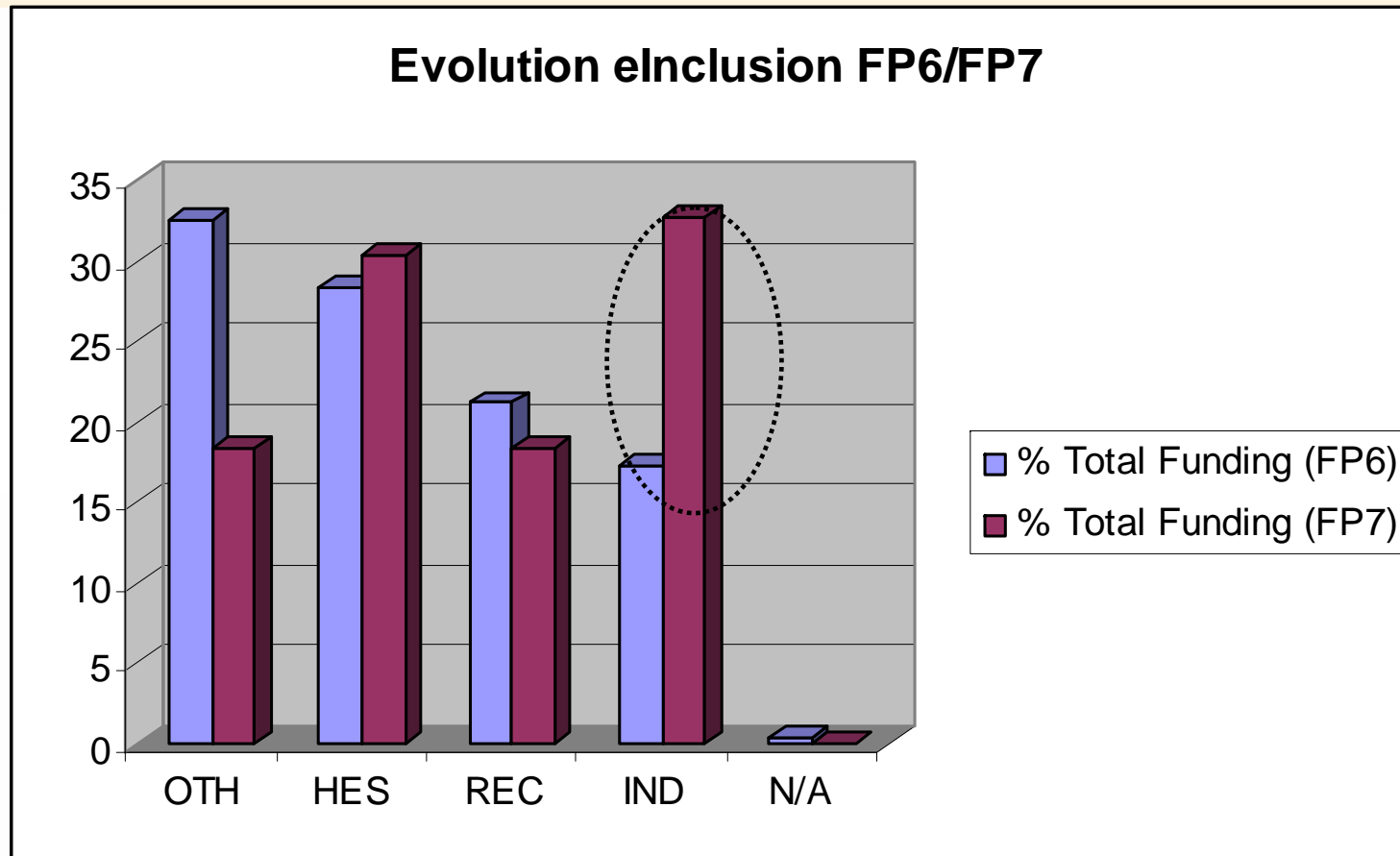- Compaign 'Be Part of It'

Policy Relevance

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- **ICT becoming ubiquitous**
  – Significant cost benefit of mainstreaming
  – Increasingly dependent on ICT in daily life
  – Challenging for people at risk of exclusion

- **Technology advances in main-stream products**
  – Cyber-physical research
    - Linking virtual environments (e.g. avatars) with physical processes
  – Advances in language technologies (voice control, voice to text), micro-nano systems, imaging and signal processing

- **Emerging assistive user interfaces**
  – New ways to incorporate accessibility into mainstream ICT and non-ICT products, << *universal self-adaptive user interface* >>
  – Natural brain-neuro-computer interaction towards new intuitive interaction with computers, home appliances, assistive technologies
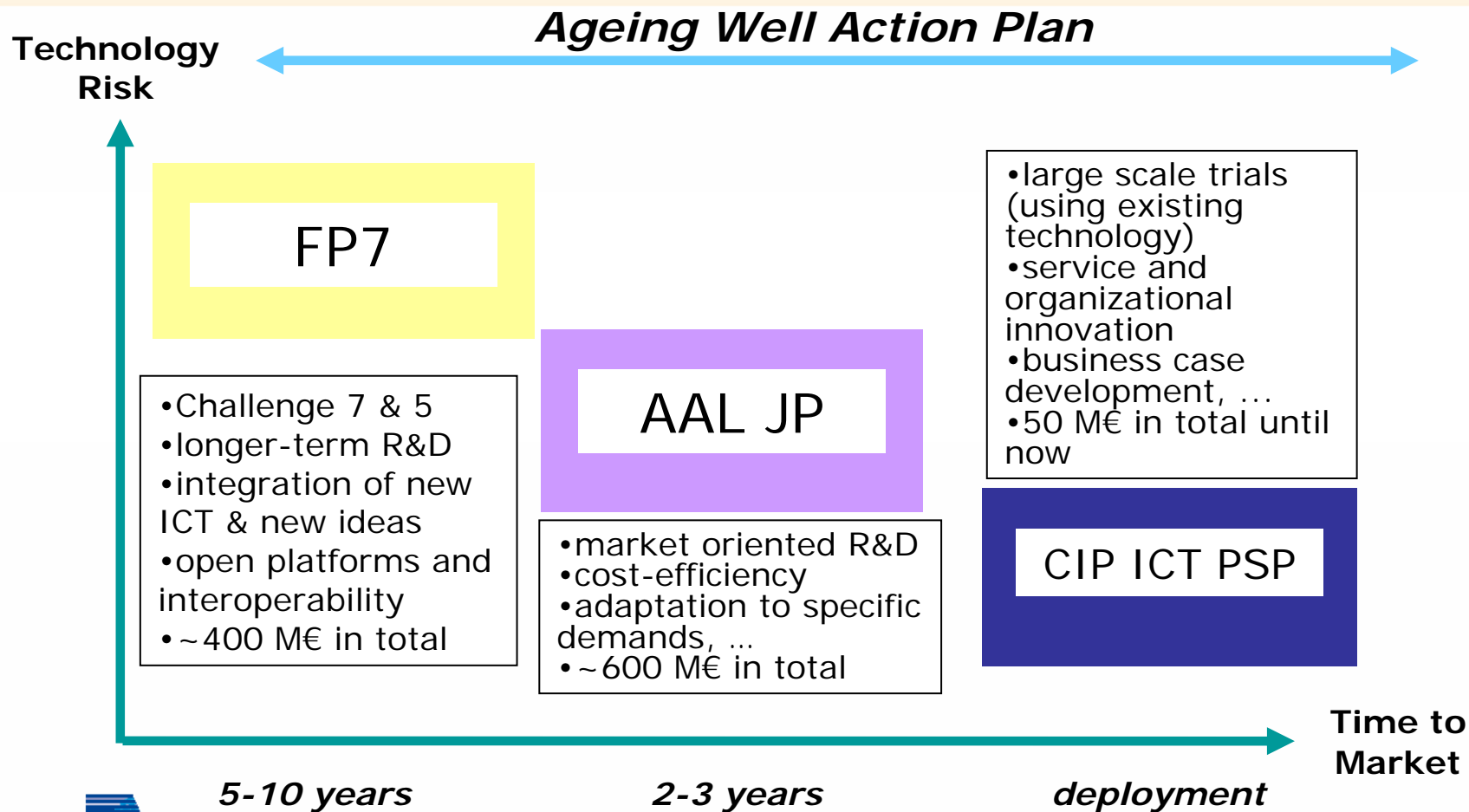
Industry participation FP6/FP7-
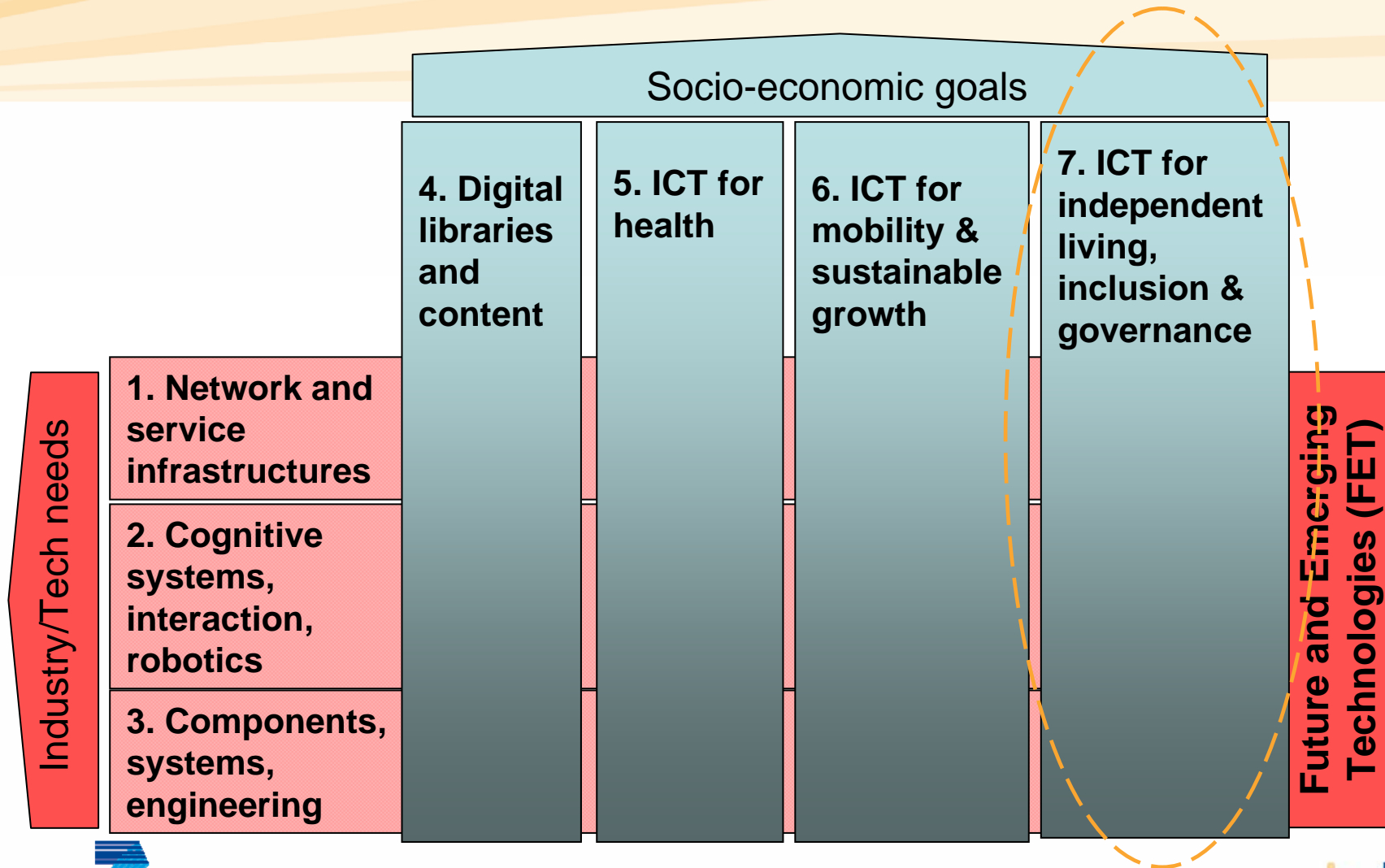→ **S**ignificant increase in the participation of the industry in FP 7 funded projects compared to FP6.

Evolution eInclusion FP6/FP7

ICT for Ageing Well
A Comprehensive EU Approach

Ageing Well Action Plan

Technology Risk

FP7

•Challenge 7 & 5
•longer-term R&D
•integration of new ICT & new ideas
•open platforms and interoperability
•~400 M€ in total

AAL JP

•market oriented R&D
•cost-efficiency
•adaptation to specific demands, ...
•~600 M€ in total

•large scale trials (using existing technology)
•service and organizational innovation
•business case development, ...
•50 M€ in total until now

CIP ICT PSP

Time to Market

5-10 years   *2-3 years*   *deployment*

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SEVENTH FRAMEWORK PROGRAMME

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Work Programme *Challenges*

Socio-economic goals

Industry/Tech needs

1. Network and service infrastructures

2. Cognitive systems, interaction, robotics

3. Components, systems, engineering

4. Digital libraries and content

5. ICT for health

6. ICT for mobility & sustainable growth

7. ICT for independent living, inclusion & governance

Future and Emerging Technologies (FET)

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Virtual user concepts for future accessible ICT

- Mass customization as enabler for embedding accessible functionality
- Avoid extensive customization by professionals
- And costly user validation with possible product re-design,
- Integrated approach
  - Seamless integration into industrial development cycle is a key, mainly for IPs

Identify need for human centered design

Specify context of use

Evaluate designs

System satisfies specified requirements

Specify requirements

Produce design solutions

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Related FP7 Projects – Call 2 2007

	Project	Topic
IP	**AEGIS** HaptiMap TOBI	Mainstream e-accessibility, open accessibility framework, Haptic, Audio and Visual Interfaces for Maps and Location-Based Services,; Tools for Brain-Computer Interaction.
FP	BRAIN **VAALID** REPLAY TREMOR HANDS UMSIC **ACCESSIBLE** INCLUSO ComeIn	BCIs with Rapid Automated Interfaces for Nonexperts; Development of a 3D-Imersive Simulation Platform for CAD; Gaming technology platform for social inclusion of MYP; An ambulatory BCI tremor suppression system; Helping autism diagnosed young people navigate & develop socially; Usability of music for social inclusion of children; Accessibility assessment simulation environment for new application design and development; Social software for inclusion of marginalized young people; Online mobile communities to facilitate the social inclusion of marginalized young people.

# Embedded Accessibility in Future ICT

- **Target users**: Developers of all ICT-based products/services

- **Objectives**:
  ICT solutions/tools to verify and optimise *generalised accessibility support* (related to vision, hearing, speech, dexterity, mobility) within future mainstream ICT-based and non-ICT products and services

- **Expected Target Outcome**:
  - New validated methods for user modelling and simulation of user interaction
  - Tools based on the 'Virtual User' concept to verify accessibility issues:
    - Realistic user modelling and interaction, virtual environments
  - Generic computer-based validation frameworks
    - For quality control ; including training material

Call 4: 01 April

Embedded Accessibility in Future ICT

- ## The Virtual user concept
  - **realistic** -- Realistic user modelling and simulated interaction, incl. virtual environments
    - Linking interaction paradigms like 3D or virtual reality to integrating accessibility services in physical environments
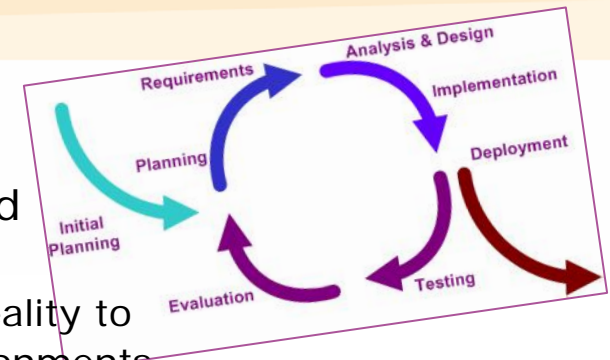
- ## Adaptive interfaces
  - Methods enabling self-adaptation of multi-modal interfaces
    - in real time to users' accessibility needs
    - Reconfigurable User interfaces and content representation for people with special needs

- ## Instruments: IPs and STREPs
  - **IP:** building on a generic integrated framework
    - Seamless integration into industrial development cycle is a key, mainly for IPs
  - **STREPs**: specific R&D on 'virtual user' modeling
    - supporting applications in high-profile domains of user and industrial relevance

Call 4: 33 MEUR

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Supporting Measures

Target Outcomes:
- a) *Embedded Accessibility of Future ICT*
- b) *ICT restoring and augmenting human capabilities*

- **Objectives**
  - RTD vision and Roadmaps
  - Stakeholder coordination

- **Focus**
  - Ensure continued and enhanced coordination of stakeholders across the value chain
  - Tackling fragmentation / standards for integration

- **Essential elements**
  - One Coordination Action for <u>each</u> target outcome
  - Credible industrial and other relevant stakeholder involvement essential

Funding Schemes and Budgets

Target	Indicative Budget	Funding Scheme
• Embedded Accessibility of Future ICT	33 M€	CP: one IP, STREPs
• ICT restoring/augmenting human capabilities		CP: STREP only
• Strategic visions, RTD roadmaps	1 M€	CSA: two CAs *(1 for each target outcome)*

Further Information

- Web Resources
  - http://cordis.europa.eu/fp7/ict/programme/challenge7_en.html
  - http://ec.europa.eu/einclusion

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