



ICT4you - Förderung für IKT im 7. EU Rahmenprogramm

Challenge 1-3 und FET Proactive

DI Jürgen Rattenberger
FFG / Europäische und Internationale
Programme

29.10.2008



Überblick



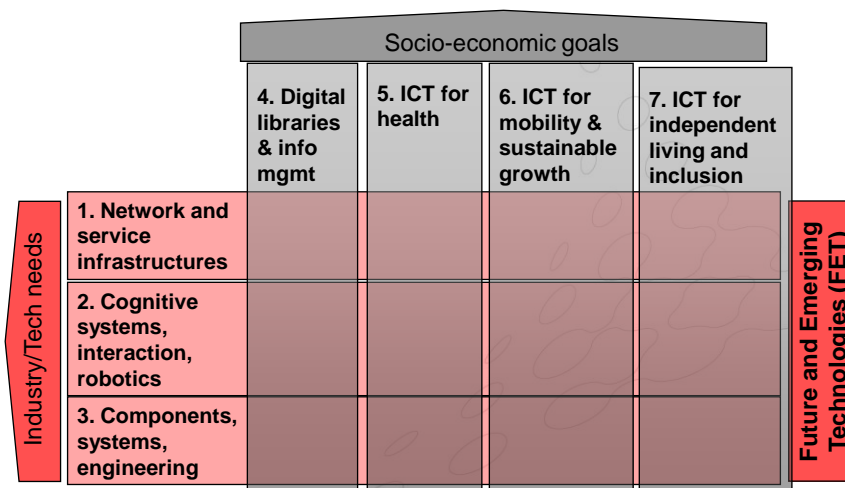
- Challenge 1: Pervasive and Trusted Network and Service Infrastructures
- Challenge 2: Cognitive Systems, Interaction, Robotics
- Challenge 3: Components, Systems, Engineering
- Challenge FET Proactive



4. AUSSCHREIBUNG FÜR INFORMATIONEN- UND KOMMUNIKATIONSTECHNOLOGIEN

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IKT Arbeitsprogramm 2009/2010





Challenge 1: Pervasive and Trusted Network and Service Infrastructures

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Challenge 1

Challenge 1: Pervasive and Trusted Network and Service Infrastructures



- Großer Call im Bereich "Future Internet"
 - Führung der EU im Bereich „Future Internet“
 - Beyond 3G, optische Netzwerke, Kognitive Netzwerk Technologien
 - Globale Standards und Europäische IPR
- Weiterer Schwerpunkt: "Internet of Things for enterprise environments"

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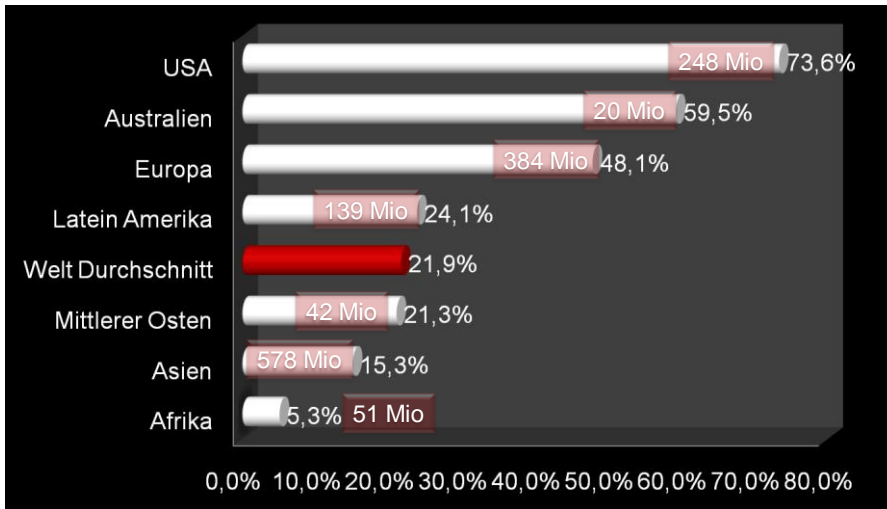


Challenge 1

Vom derzeitigen zum zukünftigen Internet Internet Durchdringungsrate



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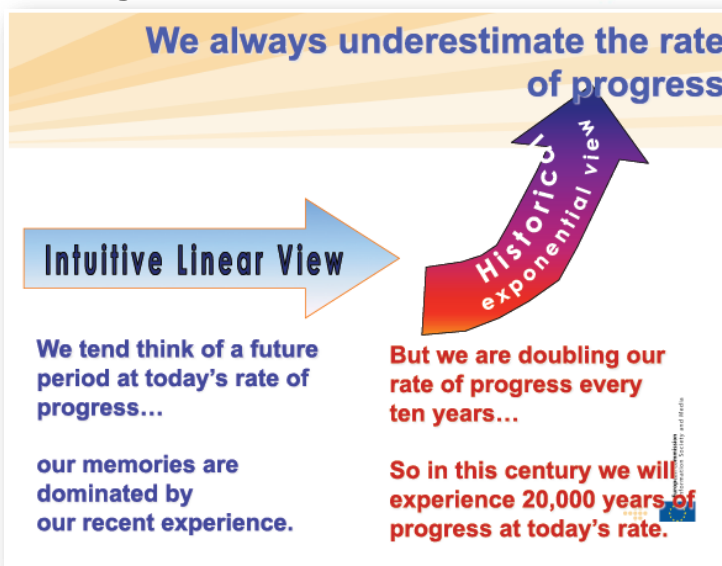
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Quelle: Internet World Stats <http://www.internetworldstats.com/stats.htm>

Vom derzeitigen zum zukünftigen Internet Entwicklungsfortschritt



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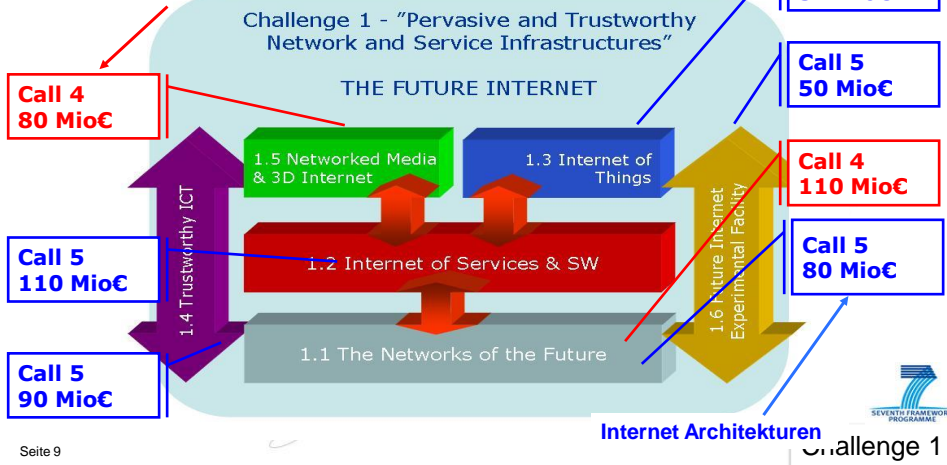
Challenge 1: Pervasive and Trusted Network and Service Infrastructures



Call 4: 18 Nov – 1 April 2009 = 190 Mio€

Call 5: June – Sept 2009 = 367 Mio€

Inklusive 3D Media Internet



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Wissenswertes



- FIRE - Future Internet Research & Experimentation
- <http://cordis.europa.eu/fp7/ict/fire/>
- Mid-Term Integrator
- Ziel: Experimental Facility eines Prototyps für „Future Internet Research and Experimentation“
- Stichworte: large scale integration, open calls for users

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Challenge 1

Challenge 1: Pervasive and Trusted Network and Service Infrastructures



Objective 1.1: The Network of the Future

Objective 1.5: Networked Media and 3D Internet

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Challenge 1

Challenge 1: Pervasive and Trusted Network and Service Infrastructures



Objective 1.1: The Network of the Future

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Challenge 1

Challenge 1: Pervasive and Trusted Network and Service Infrastructures



Hintergrund

- Ziel von Challenge 1: Die nächste Generation der allgegenwärtigen und “converged” Netzwerk- und Service-Infrastrukturen zu liefern
- Von “**mobilen und drahtlosen Systemen**” und “**Breitband für Alle**” in FP6, hin zu einer konvergierenden Objective 1.1 “The Network of the Future”
- Kommission sieht *Funk & optische Technologien* als ersten Schlüssel zum Future Internet

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Challenge 1

Objective 1.1: The Network of the Future



Ziele

- a. Future Internet Architectures and Network Technologies
- b. Spectrum-efficient radio access to Future Networks
- c. Converged infrastructures in support of Future Networks
- d. Coordination/ Support actions and Networks of Excellence

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Challenge 1

Objective 1.1: The Network of the Future



3 Ziele

- a. Future Internet Architectures and Network Technologies
- b. Spectrum-efficient radio access to Future Networks
- c. Converged infrastructures in support of Future Networks

a) Technologien effizienter machen

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Challenge 1

Objective 1.1: The Network of the Future



3 Ziele

- a. Future Internet Architectures and Network Technologies
- b. Spectrum-efficient radio access to Future Networks
- c. Converged infrastructures in support of Future Networks

b) Jenseits von 4G

- Next-generation mobile radio technologies*
- Cognitive radio and network technologies
- Novel radio network technologies

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Challenge 1

Objective 1.1: The Network of the Future



3 Ziele

- a. Future Internet Architectures and Network Technologies
- b. Spectrum-efficient radio access to Future Networks
- c. **Converged infrastructures in support of Future Networks**

Moving towards the intelligent home & what you need for that (infrastructure way)

c) Jedes Service auf jeder Infrastruktur

- Ultra high capacity optical transport / access network
- Converged service capability across heterogeneous access

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Challenge 1

Objective 1.1: The Network of the Future



Hinweise für Projektideen

- Don't take anything for granted!
- EC wants „disruptive thinking“
- Evolutionary approach?
 - preconceptions of current design have to be thrown away → but of course you have to start at what we currently have .. One cannot throw away current technology
- Necessary to go beyond IP → has been designed for a fixed Internet → struggles now with mobile aspects!
- Centralised control of distributed network management is what the EC is looking for!

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Challenge 1

Objective 1.1: The Network of the Future



Expected Impact

- Strengthened positioning of European industry in the field of Future Internet technologies
- Reinforced European leadership in mobile and wireless broadband systems, optical networks, cognitive network management technologies.
- Increased economic efficiency of access/transport infrastructures (cost/bit)
- Global standards and European IPRs reflecting federated and coherent roadmaps.
- Wider market opportunities from new classes of applications taking advantage of convergence.
- Accelerated uptake of the next generation of network and service infrastructures.

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Challenge 1

Objective 1.1: The Network of the Future



Expected Impact

- Strengthened positioning of European industry in the field of Future Internet technologies

Strengthened positioning of **European industry** in the field of Future Internet technologies

- Wichtig für erfolgreiche Projektanträge
- Wichtiger als das Erfüllen des Target Outcomes!!

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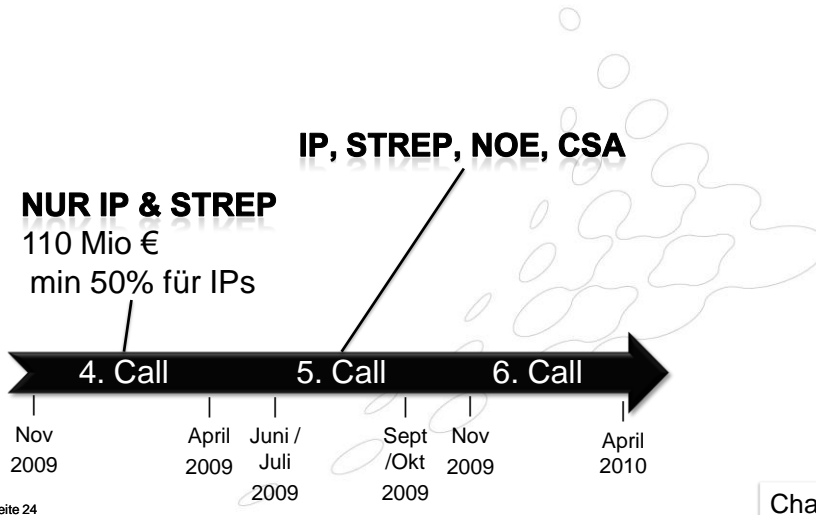


Challenge 1

Förderdetails Objective 1.1: The Network of the Future



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Challenge 1: Pervasive and Trusted Network and Service Infrastructures



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Objective 1.5: Networked Media and 3D Internet

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Challenge 1

Objective 1.5: Networked Media and 3D Internet



Ziele

- **Content aware networks** and network aware **applications**
- 3D Media Internet
- Networked search and retrieval
- Immersive media experiences **beyond HDTV** and electronic cinema

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Challenge 1

Objective 1.5: Networked Media and 3D Internet



Content aware networks and network aware applications

- Zur Verfügung stellen von **Multimedia Inhalten** und **Services** basierend auf
 - Inhalten
 - Benutzer Kontext und Anforderungen
 - “Social relational network”
- Services
 - Home Management
 - Location and mobility scenarios

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Challenge 1

Objective 1.5: Networked Media and 3D Internet



3D Media Internet

- Technologien für 3D Inhalt-repräsentation mit *“configuration/adaptation capabilities in multiple virtual worlds”*
- Ownership, identification, trading, rights associated to presence in (possibly) multiple 3D domains
- *“Architectures and technologies ensuring that 3D augmented worlds are tightly coupled to the physical world (for commercial and social applications).”*
- *3D virtual economy*

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Challenge 1

Objective 1.5: Networked Media and 3D Internet



Networked search and retrieval

- Zugang zu Multimedia Inhalten
- Suche in untersch. Informations Quellen, Typen und Herkünften
- Personalisieren der Multimedia Networked Search
 - User Context
 - User Perception
 - Usage Profile
- Optimised End to End architectures
- Verblindliche Anforderung: diese müssen mit einem massiven Anstieg des Datendurchsatz umgehen können!!

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Objective 1.5: Networked Media and 3D Internet



Hinweise der Europäischen Kommission

- Industry part is expected (NoE)
- European Industry is NOT leading in this area
 - → EC knows that there is interest from the European industry e.g. Broadcaster

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Challenge 1

Objective 1.5: Networked Media and 3D Internet



Budget Objective 1.5: Networked Media and 3D Internet



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Challenge 1

Objective 1.5: Networked Media and 3D Internet



Weiterführende Information

ICT 2008, Lyon: Info session am 27.11. Parallel Session 12a

ICT Proposer's Day in Budapest

Proposalcheck der FFG

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Challenge1



Challenge 2: Cognitive Systems, Interaction, Robotics

2. Cognitive Systems, Interaction, Robotics



Ziel

- Natürliche Interaktion mit dem Menschen
- „brauchbar“ handelnde Agenten
- Systeme mit angemessenem Grad an Autonomie

Neu im Arbeitsprogramm 2009/2010: Größerer Fokus auf
“language-based interaction”

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2. Cognitive Systems, Interaction, Robotics



Inhalte 4. Ausschreibung

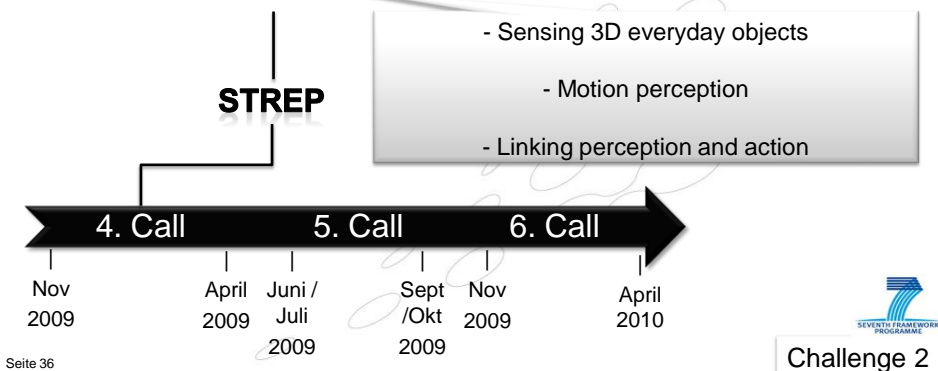
- Objective 2.1: Cognitive Systems and Robotics
- Objective 2.2: Language-Based Interaction

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Forschungsziele Objective 2.1 Cognitive Systems and Robotics 2009/2010



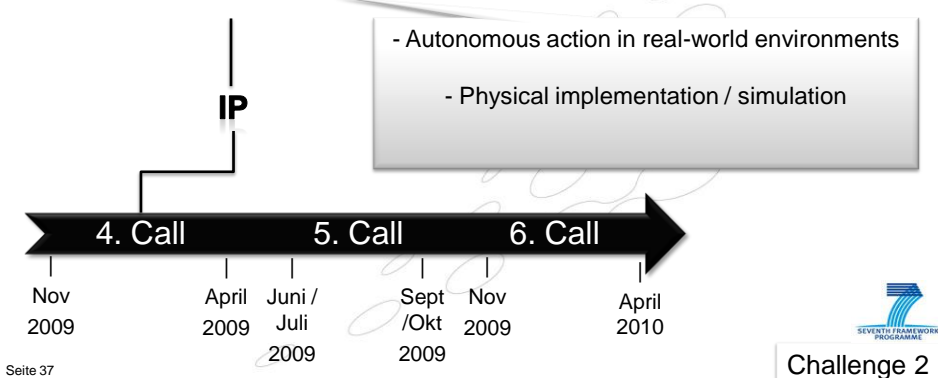
- “**New approaches** towards endowing robots with **advanced perception and action capabilities**, and towards developing **pertinent bench-marks and tests.**”



Forschungsziele Objective 2.1 Cognitive Systems and Robotics 2009/2010



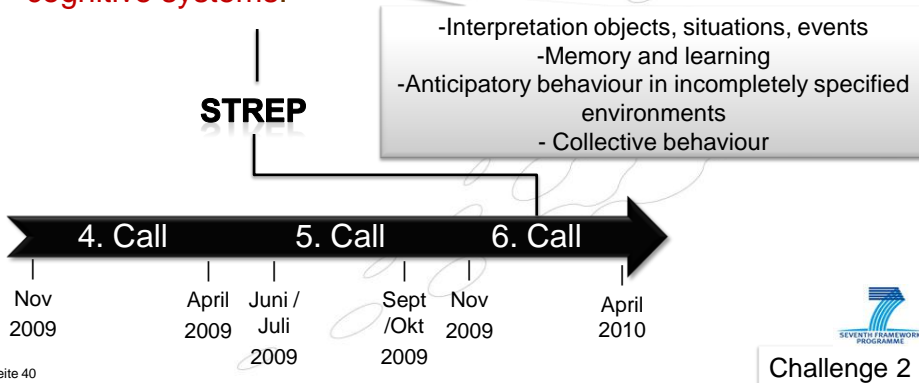
- “New, scientifically grounded system architectures integrating **communication, control, and cognitive capabilities.**”



Forschungsziele Objective 2.1 Cognitive Systems and Robotics 2009/2010



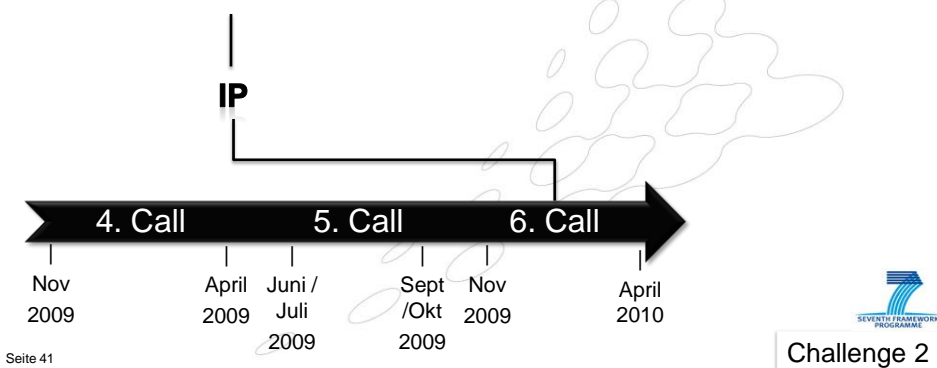
- “New approaches towards understanding and solving **key issues** related to the engineering of **artificial cognitive systems.**”



Forschungsziele Objective 2.1 Cognitive Systems and Robotics 2009/2010



- “New ways of designing and implementing **complete robotic systems** that operate largely autonomously in loosely structured dynamic environments.”



Objective 2.1: Cognitive Systems and Robotics



Budget Objective 2.1: Cognitive Systems and Robotics



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Objective 2.1: Cognitive Systems and Robotics



Weiterführende Information



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2. Cognitive Systems, Interaction, Robotics



Objective 2.2: Language-based interaction

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Challenge 2

Objective 2.2: Language-based interaction



Warum?

- 27 Nationen und 23 offizielle Sprachen innerhalb der EU
- Single European Information Space – i2010
- Neue Online Paradigmen für Zusammenarbeit und Kommunikation (Co-Creation) ... aber – **signifikante Sprachbarrieren bleiben!**

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Challenge 2

Objective 2.2: Language-based interaction



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3 Ziele

1. **Core research.**
Explore new avenues for machine translation

Erwartete Anträge:

1 IP, 8 MIO €

Neue Architekturen, Modelle und Tools für kosten-effiziente selbst lernende maschinelle Übersetzung

• Break new ground

• Multi-disciplinary

• High risk but high promise

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Challenge 2

Objective 2.2: Language-based interaction



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3 Ziele

2. **Problem oriented.**
Address selected challenges in a clearly defined usage context

Erwartete Anträge:

5 STREP, 12 MIO €

• Online Translation for the masses (beyond GoogleTranslate)

• Translation in distributed collaborative environments

• Managing multilingual content & communication

• Acquisition & annotation of language resources

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Challenge 2

Objective 2.2: Language-based interaction



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3 Ziele

3. Community building & networking

Erwartete Anträge:

1-2 NOE, 6 MIO €

• **Reinvigorate** Europe's machine translation community

• **Build bridges** between MT community and other relevant disciplines

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Challenge 2

Objective 2.2: Language-based interaction



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Budget Objective 2.2: Language-based interaction

- 26 Mio €

DRAFT!

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Challenge 2

Objective 2.2: Language-based interaction



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Weiterführende Information

ICT 2008, Lyon: Info Session
am 2. Tag

Pre-proposalcheck der EK (Bis 3
Wochen vor Ausschreibungsende)

“Mailing list” der Kommission

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Challenge 2



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Challenge 3: Components, Systems, Engineering

3. Components, Systems, Engineering



Ziel

Die **Führung** in der **Versorgung mit elektronischen Komponenten und Systemen** und deren Integration in Produkte über alle Sektoren

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3. Components, Systems, Engineering



- 3.2 Design of Semiconductor Components and Electronic-based Miniaturised Systems
- 3.3 Flexible, Organic and Large Area Electronics
- 3.4 Embedded Systems Design
- 3.6 Computing Systems
- 3.8 Organic photonics and other disruptive technologies

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3. Components, Systems, Engineering



3.2 Design of Semiconductor Components and Electronic-based Miniaturised Systems

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Objective 3.2 Design of Semiconductor Components and Electronic-based Miniaturised Systems



Ziele

- Improved design platforms, interfaces, methods and tools for the next generations of technologies
 - Energy efficient electronic systems
 - Integration of heterogeneous functions: 3D, Systems-in-Package, Network-on-Chip, wireless
 - Reliability-aware design

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Objective 3.2 Design of Semiconductor Components and Electronic-based Miniaturised Systems



Budget

Call 4: 25 M€

IP/STREP 21.5 M€

CSA 3.5 M€

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3. Components, Systems, Engineering



Objective 3.3 Flexible, Organic and Large Area Electronics

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Objective 3.3 Flexible, Organic and Large Area Electronics



Hintergrund „Organische Elektronik und großflächige Prozesstechnologien“ (FOLAE)

Organic and Large Area Electronics has been predicted to reach in 2 decades a market size of the order of that of **silicon today**



Figure 1: Photograph of Polymer Vision display, in rolled-up state and integrated in product prototype.

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Objective 3.3 Flexible, Organic and Large Area Electronics



Hintergrund „Organische Elektronik und großflächige Prozesstechnologien und Bildschirmsysteme“ (FOLAE)

- In FP6: mehr als 100 Mio€ für FOLAE
- 17 Projekte
 - Erforschung von Materialien, Technologien und Systemen die sich mit dem Herstellungsprozess beschäftigen
- FP7 bis jetzt ebenfalls 17 Projekte (Call 1&2) 58 Mio €
- Call 4 ist nun die Chance FOLAE jenseits von FP6 zu bringen

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Objective 3.3 Flexible, Organic and Large Area Electronics



Ziele

- Flexible, organic and large area electronic devices and building blocks
- Flexible or foil-based systems
 - Using organic and/or inorganic building blocks
 - e-paper, e-card
 - OLED/PV based systems
 - Signage
 - Chemical/physical/bio sensors
 - Energy storage
 - Transparent electronics

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3. Components, Systems, Engineering



Objective 3.4 Embedded Systems Design

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Objective 3.4 Embedded Systems Design



Ziele

- „*Theory and novel methods for embedded systems design*“
 - Erhöhung der Produktivität der Herstellung
 - Zuverlässige (dependable) embedded Systems
 - Heterogenität
 - Herstellen von Embedded Systems mit Komponenten mit untersch. Charakteristika
 - **Vorhersagbarkeit von nicht-funktionalen Eigenschaften** (Performance, Stromverbrauch usw.)

http://cordis.europa.eu/fp7/ict/programme/challenge3_en.html

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Objective 3.4 Embedded Systems Design



Unterschied Objective 3.2 und 3.4

- Systeme, bei denen alles auf einem Chip ist (Systems on Chip)
 - „center of gravity“ eher hardware bezogen
-
- Objective 3.2
- Objective 3.4 eher auf der System-Seite (embedded Seite)
- Objective 3.4
- The diagram shows two large, grey, 3D-style arrows pointing from the list items to the corresponding objective labels. The top arrow points from the first two list items to 'Objective 3.2'. The bottom arrow points from the third list item to 'Objective 3.4'.

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Objective 3.4 Embedded Systems Design



Ziele

- „*Modules and tools for embedded platform-based design*“
- IP: soll Integrierung der Design-Tools abdecken
- Strep: spezifische Themen oder Probleme adressieren
- Internationale Zusammenarbeit? → Fokus auf Grundlagen orientierter Forschung

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Objective 3.4 Embedded Systems Design



Weiterführende Information

Embedded Systems Consultation Workshop
report (8.04.2008)
http://cordis.europa.eu/ict/esd/events_en.html

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Challenge 2

3. Components, Systems, Engineering



Objective 3.6 Computing Systems

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Objective 3.6 Computing Systems



Ziele

- Parallelisation & programmability
 - Automatic parallelisation, new high-level parallel programming languages and/or extensions to existing languages
- Methodologies, techniques and tools
 - Multicore and/or reconfigurable systems that continuously adapt to a constantly changing environment
 - Virtualisation
 - Customisation
 - Rapid extension and/or configuration of existing systems, architectural templates
 - System simulation and analysis
 - Advanced simulation and analysis of complex multicore systems to drastically improve the simulation speed

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3. Components, Systems, Engineering



Objective 3.8 Organic Photonics and other Disruptive Photonics Technologies

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Objective 3.8 Organic Photonics and other Disruptive Photonics Technologies



Warum Photonics?

- Unterstützt EU-Schlüssel-Politiken
 - Industrie
 - Produktion innerhalb der EU (behalten)
 - Verlorenes Terrain zurückerobern
 - Umwelt
 - Umweltfreundliche Materialien und Prozesse
 - Energie-Effizienz
 - Niedriger Energieverbrauch bei Verwendung und Herstellung

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Objective 3.8 Organic Photonics and other Disruptive Photonics Technologies



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Wichtig für Projekte im 4. Call

- „Advanced research opening new opportunities“
- Priority given to novel or „breakthrough“ approaches rather than incremental developments
- Driven by application requirements
- **Move proof-of-principle out of the lab & support industrial competitiveness**

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Objective 3.8 Organic Photonics and other Disruptive Photonics Technologies



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Ziele

- Organic Photonics
 - OLEDs
 - Organic photovoltaic cells
 - Light guiding structures
- Disruptive / cutting-edge photonic technologies
 - Exploiting effects at the limits of light-matter interaction (sub-wavelength structures, plasmonics, controlling the quantum degrees for freedom, metamaterials,..) for **transition from advanced research to industrial applications**

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Objective 3.8 Organic Photonics and other Disruptive Photonics Technologies



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Budget

Call4 – Strep: 25 Mio€
Call 4 – NoEs: 5 Mio€

Pre-proposalcheck der EK (Bis Mitte März verfügbar)

EU R&D Initiative, Projekte, Player:
<http://www.opera2015.org/home.asp>

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Unterschied zu den JTIs



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Focus der JTIs:

ENIAC JTI (Nanoelektronik): Technologie für 'More Moore' und 'More than Moore'

→ ICT WP: beyond CMOS und advanced "More than Moore"

ARTEMIS JTI (Embedded Systems): Plattformen für das Design und die Implementierung von ES, abhängig von spezifischen Industrie/Anwendungs Anforderungen

→ ICT WP: new concepts for the design of next generation applications of ES

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Future and Emerging Technologies

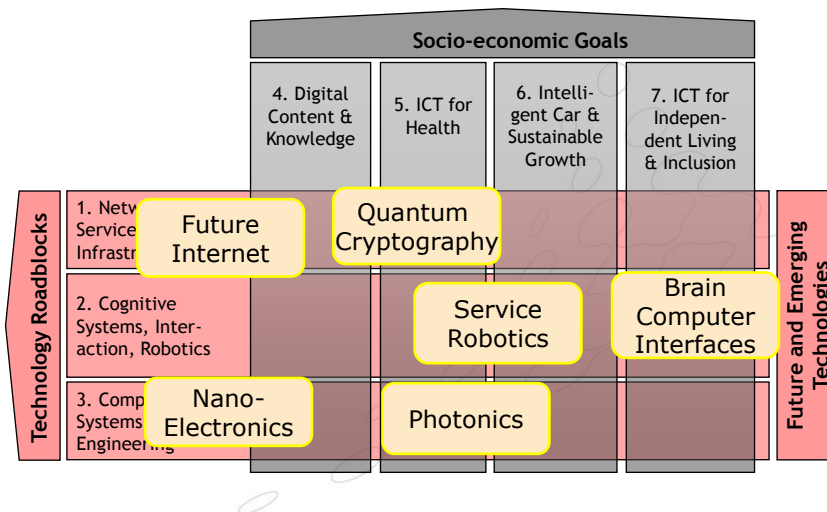
Proactive Initiatives

FET Proactive

- Pfadfinder um neue und visionäre Ideen zu erforschen
- Fokus auf
 - Langzeit-Grundlagenforschung
 - high risk / high pay-off
 - multi- und inter-disziplinäre Forschung
 - Technologischer Durchbruch

FET Proactive + FET Open

Impact von FET “Pathfinder” für neue IKT Kerngebiete



FET Proactive



- Concurrent Tera-Device Computing (15M€, IP/Strep)
- Quantum Information Foundations & Techn. (15M€, IP)
- Bio-Chemistry based Information Techn. (7M€, Strep)

FET Proactive



- Concurrent Tera-Device Computing
 - **Integrated circuits and tightly-coupled systems will integrate up to 1000 billion devices by the year 2020.**
 - Radically new methods and tools for architecture, design and programming of chips and systems beyond 2020

FET Proactive



Concurrent Tera-Device Computing

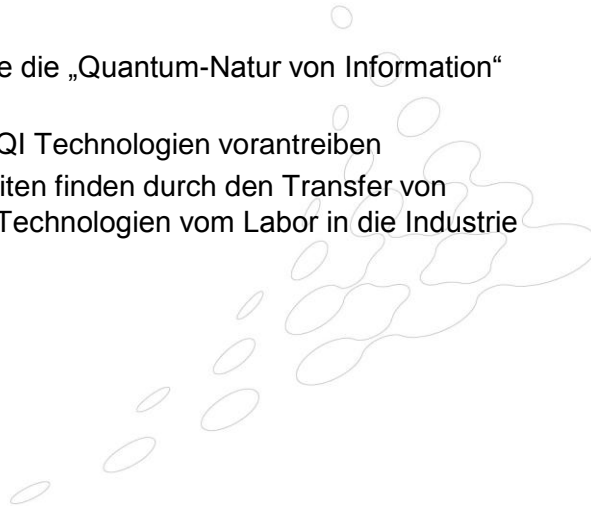
- **Radically new concepts**, design paradigms, methods and proof of concepts addressing design, compilation and run-time complexity of **many-core (100+) heterogeneous systems**
- **Methodologies and approaches** to the **design of dependable systems** coping with **critical levels of components, failures** and variability.
- Radically new **design and programming paradigms** for effective programming (scalability, portability, dependability) of **many-cores tera-scale systems.**

FET Proactive



Quantum Information Foundations & Technologies

- Technologien die die „Quantum-Natur von Information“ ausnutzen
- State-of-the-art QI Technologien vorantreiben
- Neue Möglichkeiten finden durch den Transfer von “entanglement” Technologien vom Labor in die Industrie

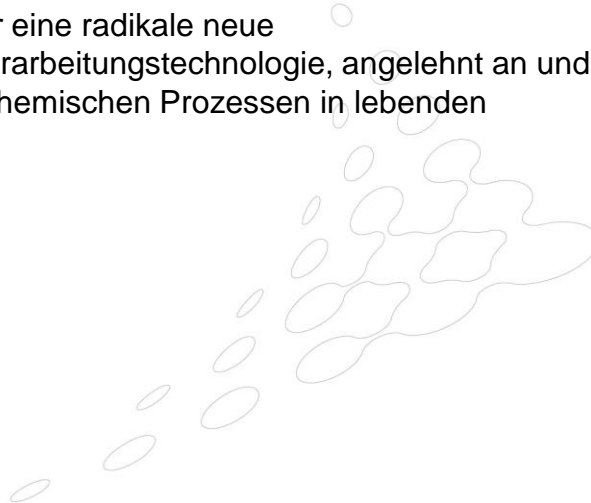


FET Proactive



Bio-Chemistry based Information Technologies

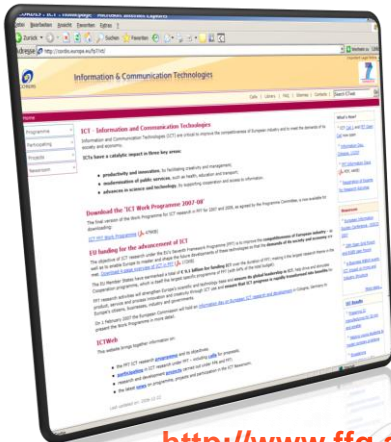
- Grundlagen für eine radikale neue Informationsverarbeitungstechnologie, angelehnt an und inspiriert von chemischen Prozessen in lebenden Systemen



Bio-Chemistry based Information Technologies

- aim at exploiting information handling **capabilities of bio-inspired chemical systems** by developing appropriate mechanisms to direct, control and analyse their processes
- aim at exploiting their **ability to adapt/evolve/flexibly reconfigure** by merging information handling processes and processes that create or reconfigure the physical system
- be developed alongside a clear vision on its potential implementation and impact on 'information processing'
- **experimentally (physically) demonstrate** major steps towards realizing advanced information processing systems

IKT Informationen



<http://www.ffg.at/rp7>

<http://www.cordis.lu/ict>

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Linksammlung



ICTProfiles

Benefit from Austrian
Excellence

Österreichischer IKT
Kompetenzkatalog

www.ictprofiles.at

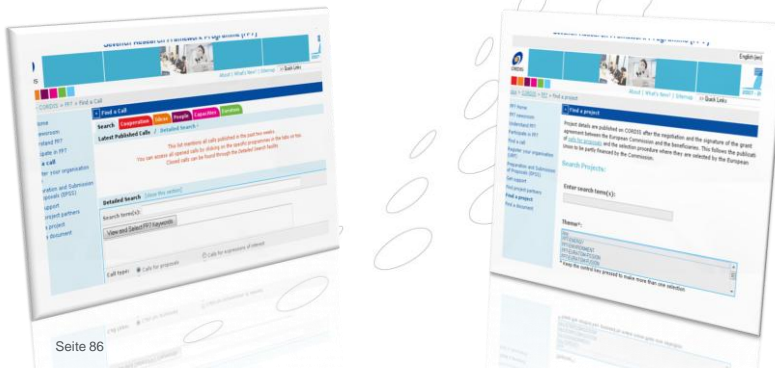


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Linksammlung CORDIS – Find a ...



- NEU: Find a project
http://cordis.europa.eu/fp7/projects_en.html
- Find a call
<http://cordis.europa.eu/fp7/dc>



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Linksammlung Ideal-ist – Partnersuch Tool



- Ideal-ist
<http://www.ideal-ist.net>



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UNTERSTÜTZUNGS- MÖGLICHKEITEN

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Unterstützung durch die FFG

Europäische und Internationale Programme

- E-Mail Service
- Persönliche Beratung
- Anbahnungsfinanzierung
- Partnersuche
- Recht (IPR)
- Proposalcheck
- Projektmanagement
- Technologieverwertung

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Anbahnungsfinanzierung



Förderhöhen/grenzen

Förderbare Vorhaben	Richtwert der Förderhöhe
Projektkoordination	€ 15.000.-
Projektpartnerschaft	€ 7.000.-

Förderintensität:

max. 75% der anerkehbaren Anbahnungskosten

Link: <http://rp7.ffg.at/Anbahnungsfinanzierung>

Kontakt



Jürgen Rattenberger
+43 (0)5 7755 – 4208
Juergen.Rattenberger@ffg.at
www.ffg.at/rp7