Trilogy
Re-Architecting the Internet

Project Overview for FP7 Future Networks
Concertation Meeting, March 11th – 12th 2008

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The Internet only just works

- Internet out-growing its original design
- All stakeholders affected
  - End-users
    - Spam, security concerns
  - Operators
    - Address space depletion
    - Inter-domain routing limitations
  - Enterprises
    - Multi-homing
    - DDoS
  - Developers
    - Middleboxes
Trilogy – An Architecture for Change

Main Objectives

- Develop a unified control architecture for the Future Internet that can adapt in a scalable, dynamic and robust manner to local operational and business requirements
- Develop and evaluate new technical solutions for key Internet control elements: reachability & resource control
- Assess commercial and social control aspects of our architecture & technical solutions, including internal & external strategic evaluation
Project key issues

- Establish & control transparent reachability in a scalable, dynamic & resilient manner
  - Topics include: routing, multi-homing, remote traffic filtering

- Develop & evaluate a unified approach to resource control that is efficient, fair and incentive-compatible
  - What is a resource?
    - Congestion
    - Storage, battery life, spectrum...

- Allow a diverse set of parties to use & share the internetwork

- Understand what architectural features allow controlled behavioural flexibility for different technical, social and economic outcomes

- Interact with business stakeholders from beyond project to get commercial/strategic steer
Trilogy interactions

EU Research Activities
- CFP**
- EIFFEL
- 4ward
- eMobility
- Future Internet Assembly

Global Consensus
- HEN
- GENI
- XORP
- IETF
- FIND
- IRTF

Experimental Testbeds
- OneLAB

**Communications Futures Programme
Opportunities for collaboration

- Future Internet Technologies cluster
- Future Internet Assembly
- Scientific Workshop
- Industrial Workshop
- Summer school
Contacts

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WP2 – Resource Control
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WP3 – Social & Commercial Control
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Back-up slides
Trilogy’s Technical Scope

- Crudely: “Control” for “The Internet”
  - “The Internet” == the bit which has to be universal
  - Operate efficiently across arbitrary technologies
  - Operate across arbitrary organisational/economic boundaries

- Isn’t this a done deal already?
  - No! “The Internet Only Just Works”
  - The absence of (usable) control mechanisms reduces it to a lowest-common-denominator set of capabilities

- Vision of Convergence between mobile, fixed, public, private, home, …
  - Control architecture allows assumptions on ‘who controls what’ to shift

- … but the technical scope is deliberately tightly focussed
  - We don’t look ‘downwards’ at particular link classes
  - We don’t look ‘upwards’ at middleware, service support infrastructures, virtualisation …