

ICT SHOK Future Internet Programme

A Finnish national research
programme on Future Internet

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Finnish SHOKs

“Strategic Centres for Science, Technology and Innovation (SHOK) will provide a new way of *bringing together* the dispersed *research resources* to meet targets that are important for Finnish business and society.”

Finnish SHOKs

Companies, universities and research institutes will agree on a joint research plan. The plan will aim to meet the needs for practical application by companies within a 5-10-year period.

In addition to shareholders, public funding organisations will commit themselves to providing funding for the centres in the long term.

Finnish SHOKs

Energy
and
environment

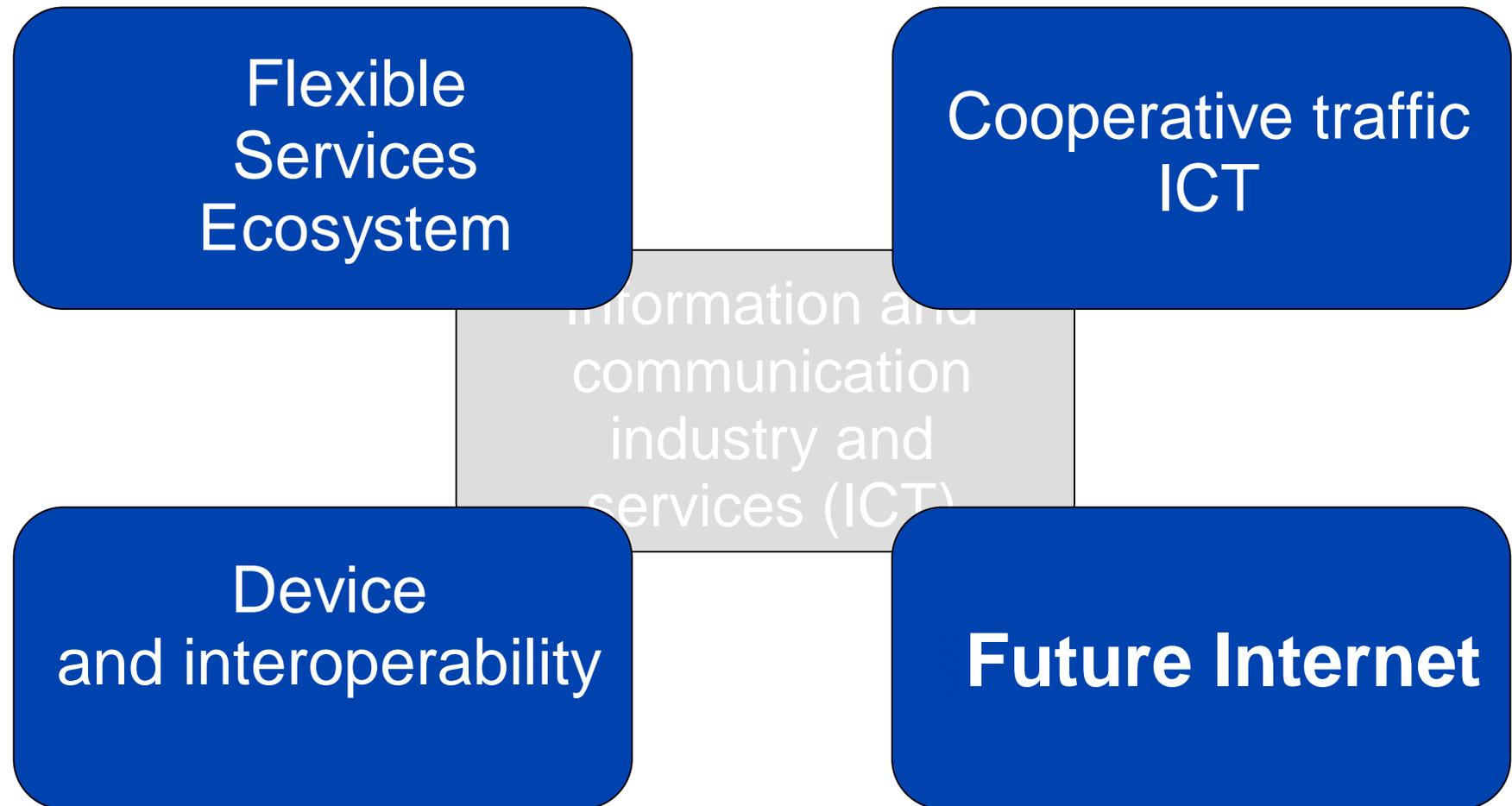
Metal products and
mechanical
engineering

Information and
communication
industry and
services (ICT)

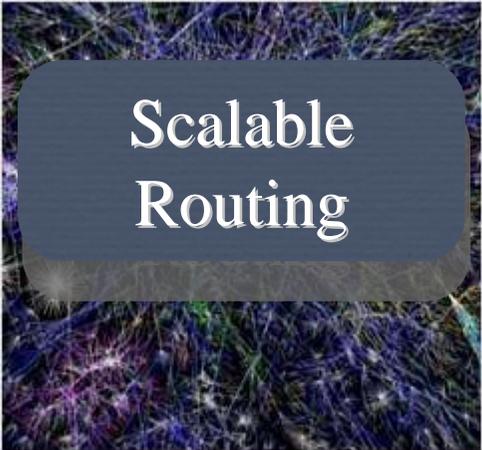
Forest cluster

Health
and
well-being

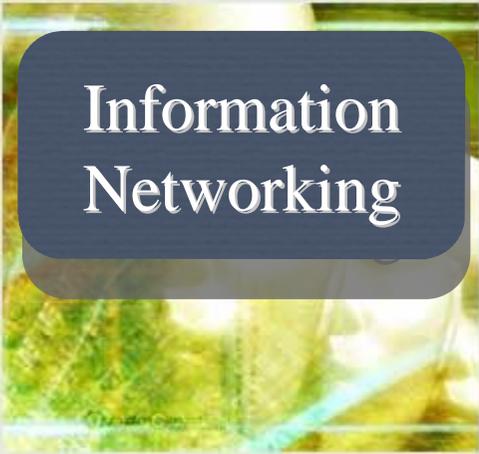
ICT SHOK: Four Strategic Research Agendas (SRA)



Present Problems



Future Challenges



Information
Networking

A photograph showing a network of fiber optic cables with glowing green and blue light points, set against a blurred background of green foliage.



Usage Patterns

A close-up photograph of two people, a man and a woman, looking at each other and smiling, suggesting a social or collaborative interaction.



Socio-
Economics

A photograph of a group of people, possibly at a market or festival, with various items and people visible in the background.



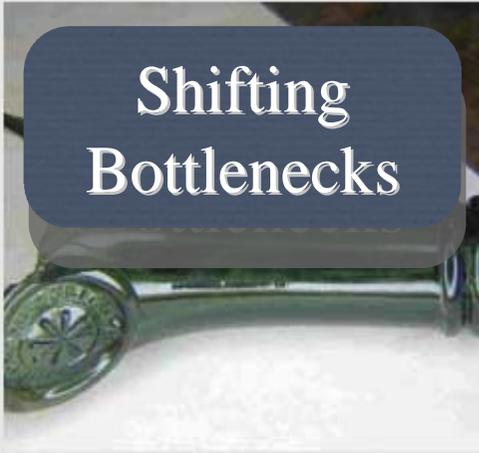
Autonomy &
Resilience

A photograph of a person skydiving, with a parachute visible against a bright blue sky with scattered white clouds.



Energy
Consumption

A photograph of several tall, modern glass skyscrapers reaching towards a blue sky with light clouds.



Shifting
Bottlenecks

A photograph of a car's front wheel and suspension system, showing the tire and the mechanical components.

ICT SHOK Future Internet Research Agenda

Vision

Future Internet will become a *mission critical backbone* of global information society with billions of mobile and wire line users instantly connected to information and each other, and using the Internet to communicate, conduct business, manage their everyday lives, express themselves, and enjoy entertainment.

Mission

Enhance the Internet technology and ecology as a *platform for innovation* while providing strong governance over the use of the network resources and information in such a way that especially mobile use of the network and its services will be natively supported

Partners

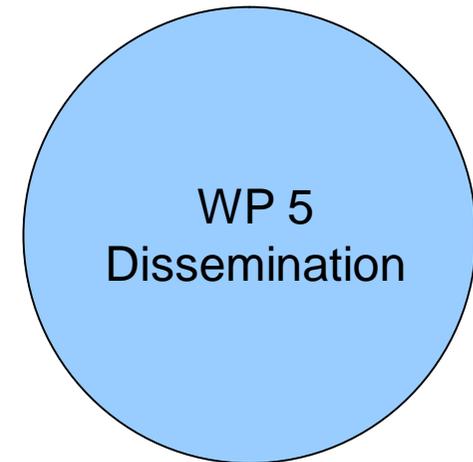
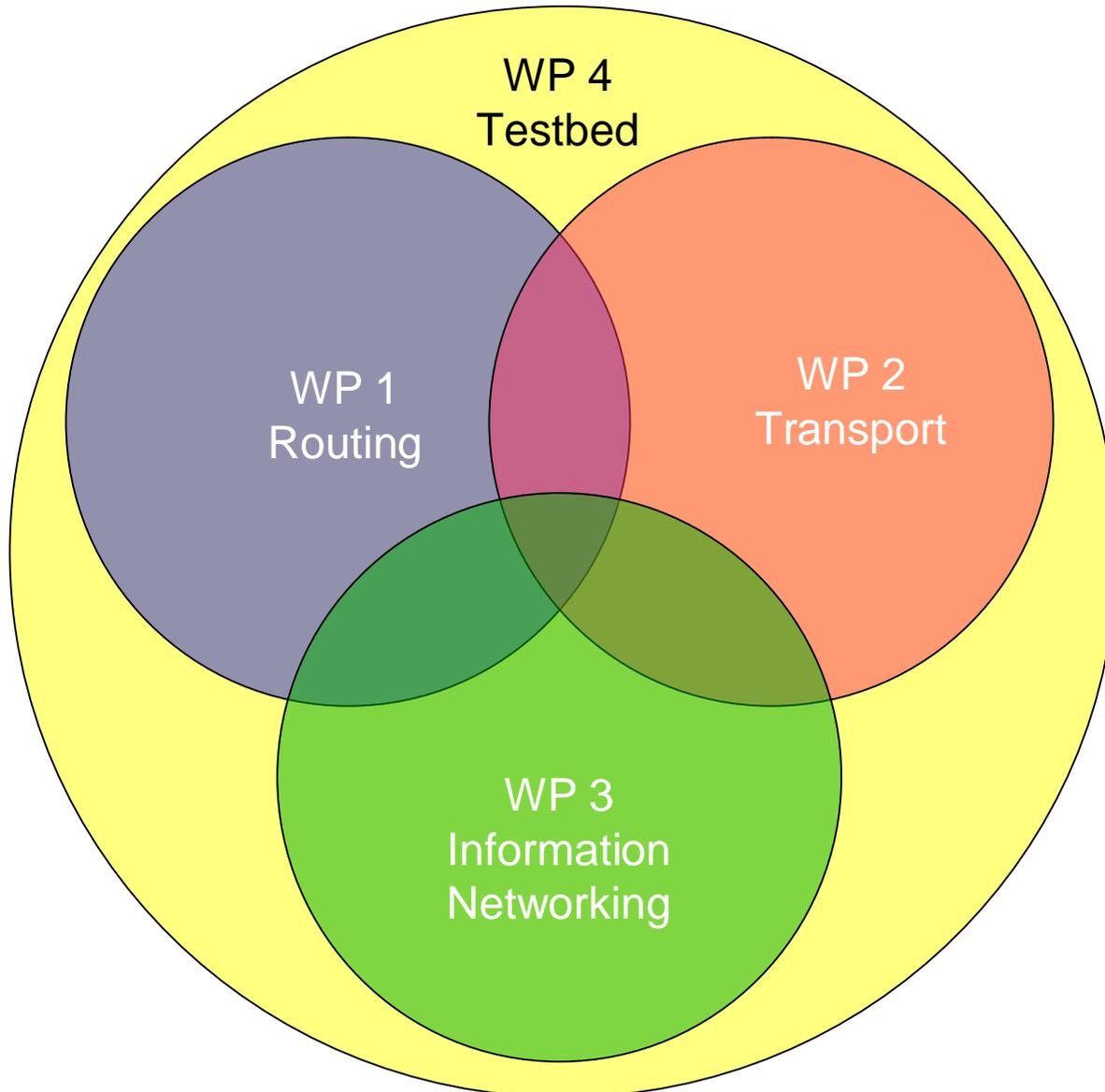
§ Industrial

- Ericsson
- Nokia
- Nokia-Siemens Networks
- TeliaSonera
- The Finnish IT Center for Science (CSC)

§ Academic

- TKK
 - Communications and Networking
 - Computer Science and Engineering
 - HIIT Research Center
- Tampere Univ. of Tech.
- University of Helsinki
- University of Jyväskylä
- Technical Research Center of Finland (VTT)

Structure of the work



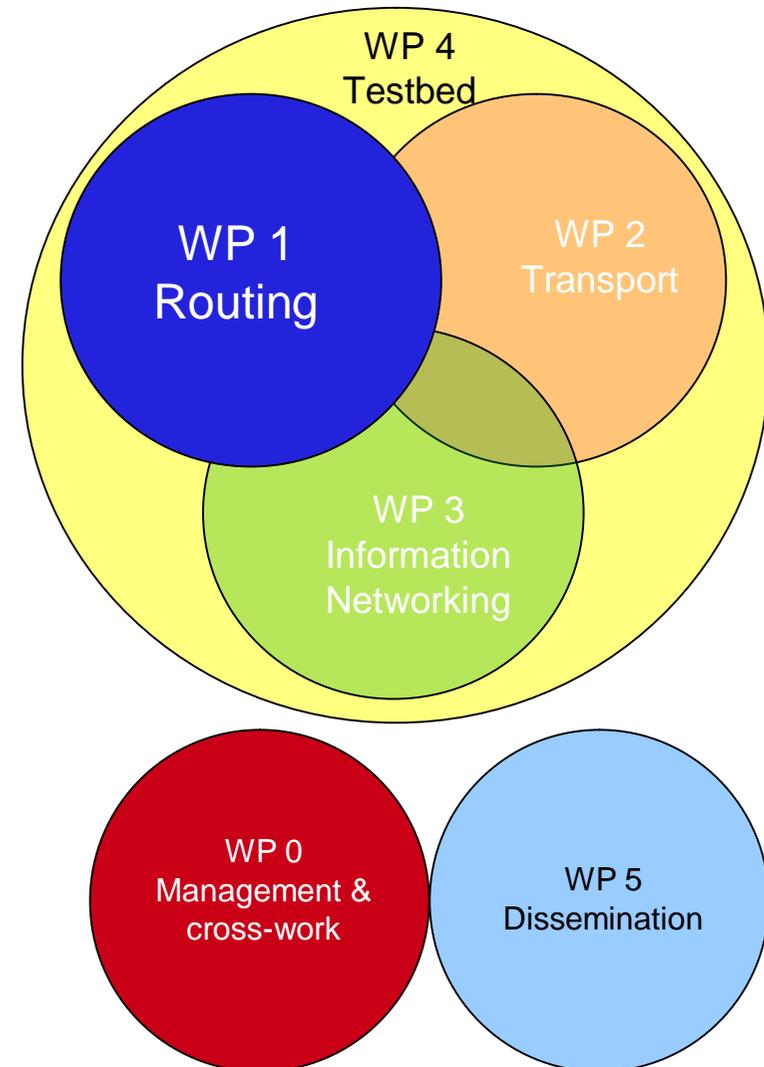
WP 1 - Routing Scalability

§ Routing problem validation

§ Indirection layer (Six/One, HIP)

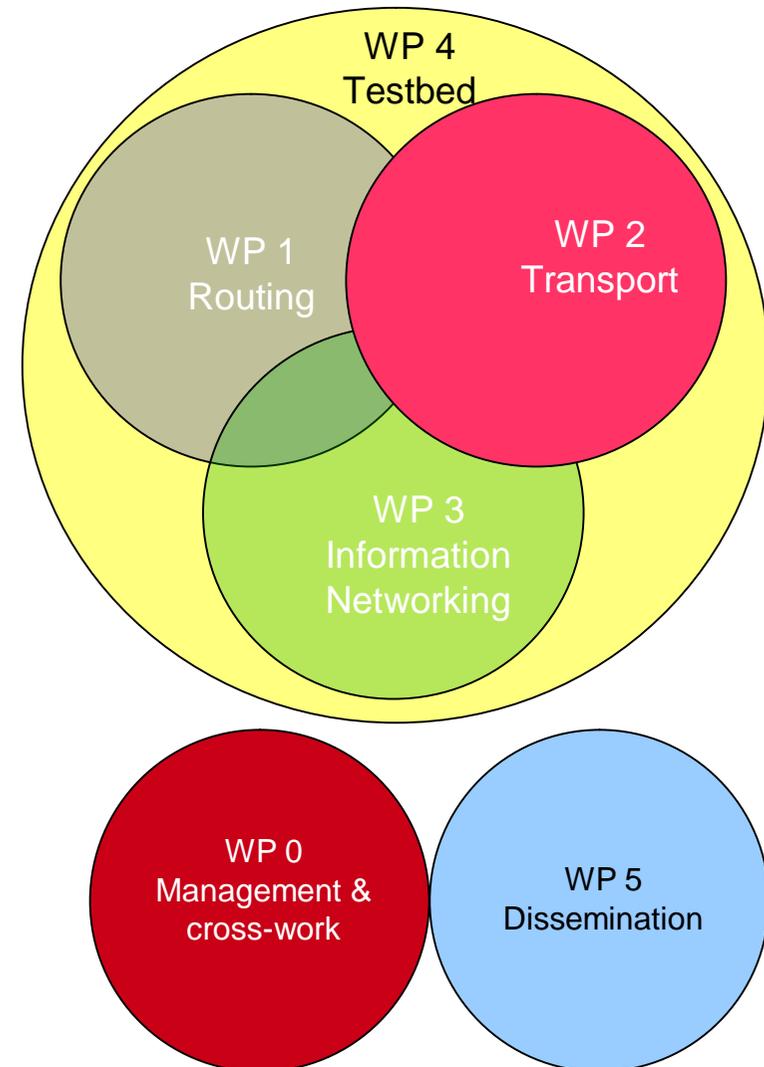
§ Address aggregation based schemes

§ Routing in the network of the future (e.g. Ethernet routing)



WP 2 - End-to-end Connectivity

- § **Energy-aware Internet communications**
- § **Communications in challenged environments (e.g. DTN)**
- § **Developments in Internet transport**
- § **Policy-based resource management (e.g. 802.21 and 3GPP ANDSF)**



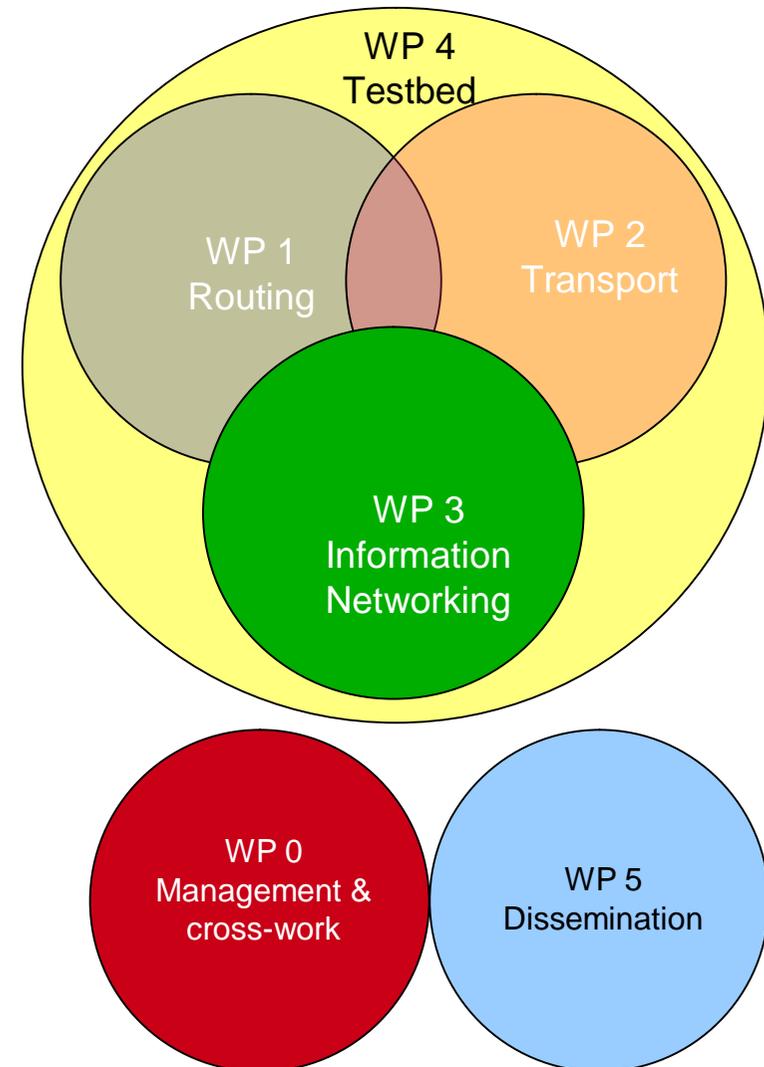
WP 3 - Information Networking

§ **Storage and creation**

§ **Dissemination**

§ **Access**

§ **Security, trust, privacy**

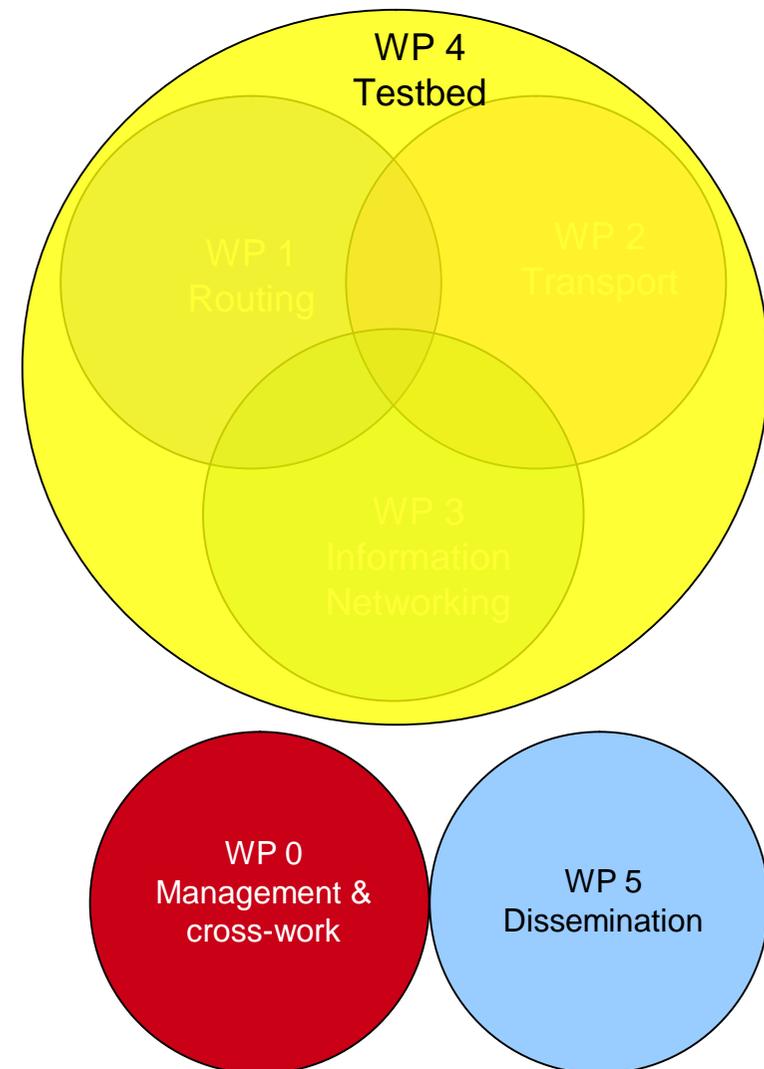


WP 4 - Testbed

§ **Backbone network**

§ **Access network**

§ **Coordination of experiments**



WP 5 - Dissemination

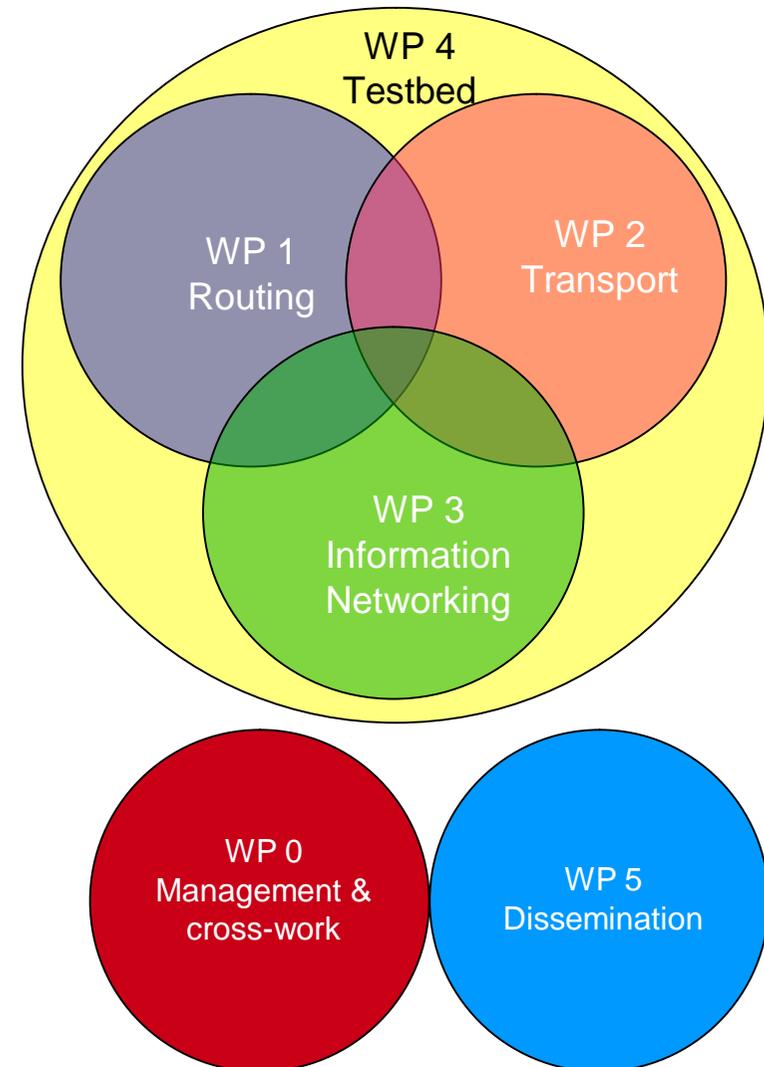
§ **Public events**

§ **Publicity**

§ **Education**

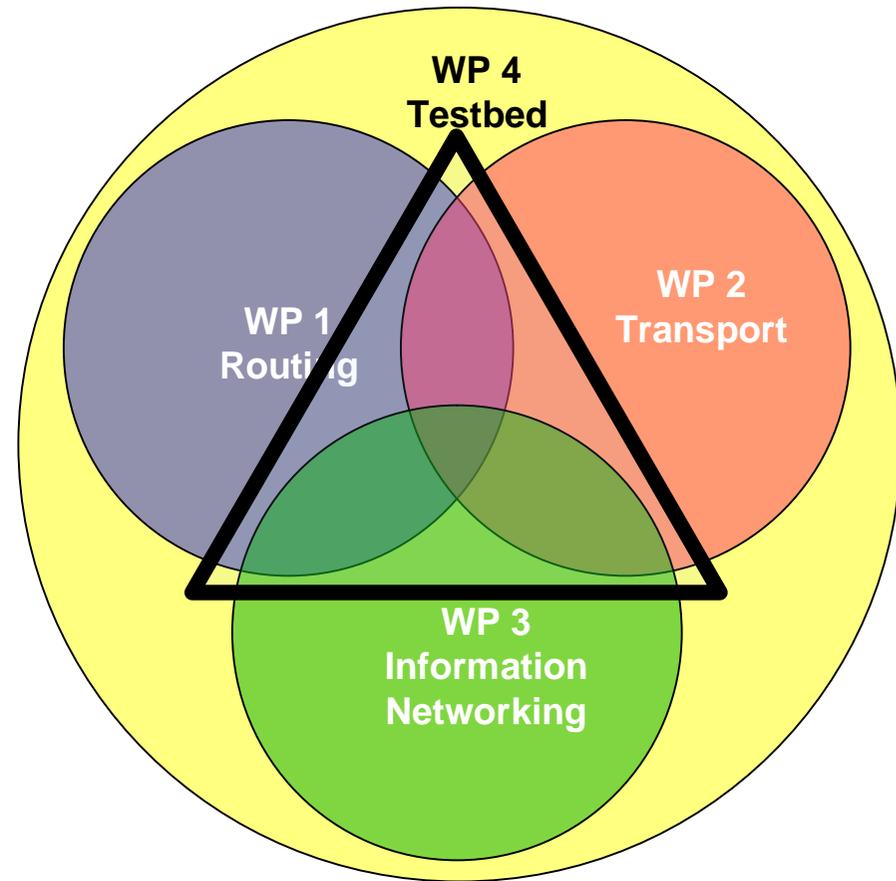
§ **International co-operation**

§ **Standardization**

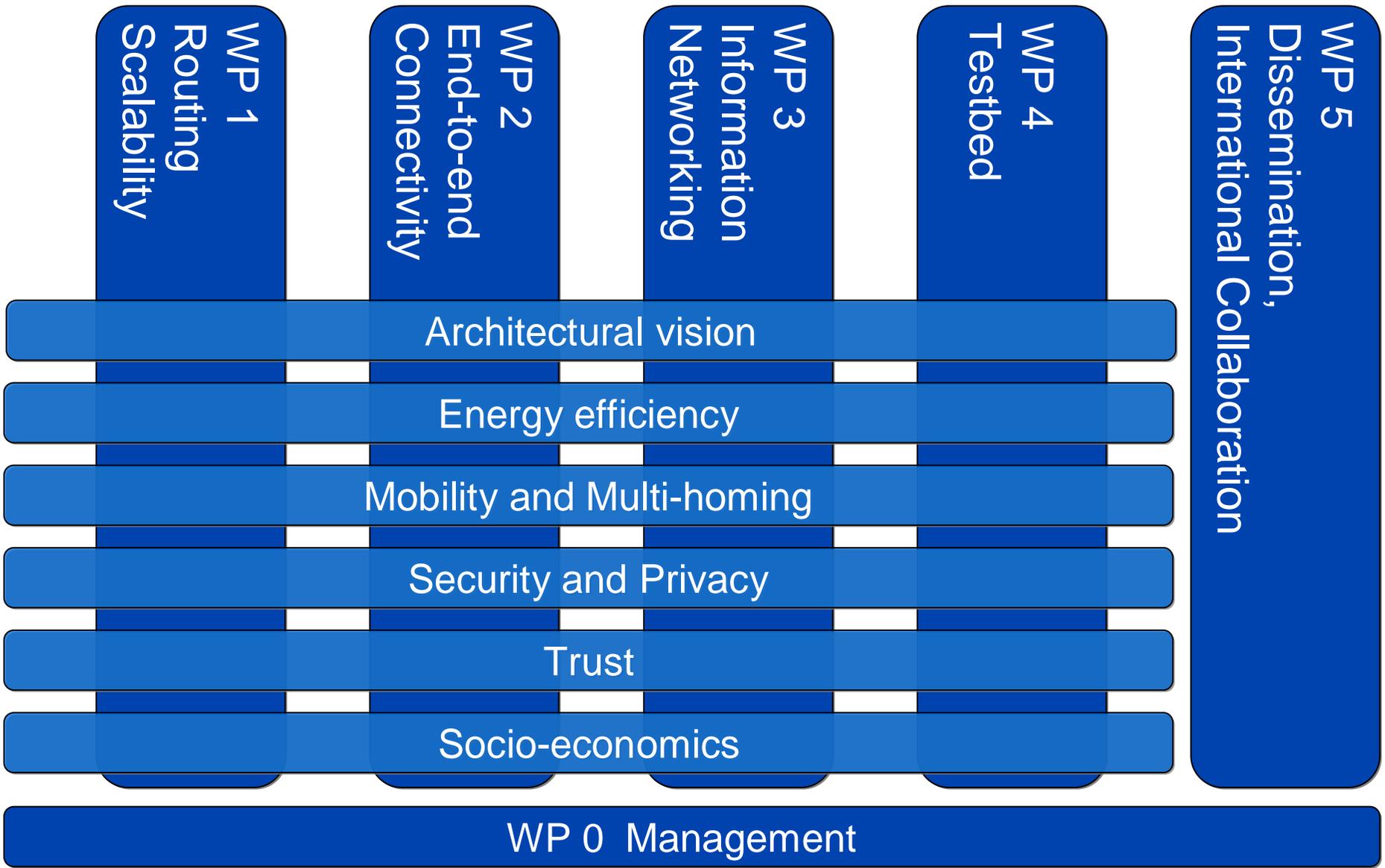


WP 0 - Six Cross-issues

1. Architectural vision
2. Energy-efficiency
3. Mobility & multihoming
4. Security & privacy
5. Trust
6. Socio-economics



WPs and cross-WP work



Key points

- § **Long lasting undertaking between industry and academia**
- § **Main topics: routing, transport, information networking**
- § **Short, medium and long-term goals**
- § **Six cross-WP topic areas**
- § **First year ~50 PY, 6 M€**
- § **Focus area director of FI: Reijo Juvonen / NSN**
- § **Academic coordinator of FI: Jukka Manner / TKK**

More info

www.futureinternet.fi