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Institut
Integrierte Schaltungen



POF-ALL Project

Paving the Optical Future with Affordable Lightning-fast Links



IST-FP6 – STREP project n. 027549 – POF-ALL
Paving the Optical Future with Affordable Lightning-fast Links



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The goal

- IST-FP6 STREP project n. 027549
 - POF-ALL means “Paving the Optical Future with Affordable Lightning-fast Links”
 - Duration: 01/2006 – 06/2008 (30 mo.)
 - Total Cost: €2.6 m
 - EC Contribution: €1.6 m

“POF-ALL shall develop a technology based on Plastic Optical Fiber (POF) to allow delivery of 100+ Mbit/s symmetrically to residential users at costs far lower than existing alternatives.”

- The technical goal is to design and build low-cost “optical modems” based on large-core POF, operating
 - symmetrically (upload speed = download speed)
 - at 100 Mbit/s or more
 - over distances of 200 meters or more

- The purpose is to enable broadband Internet access to everybody, by means of a low-CapEx optical technology
 - optimised for the last part of residential access networks (edge networks),
 - targeting in-building networks of large apartment houses, condominiums and high rise buildings
 - simple enough to be installed by anyone, with no special tools, in in-house networks

- The use of large core POF (1mm diameter) greatly eases installation with respect to standard glass optical fiber (GOF)
 - Large core POF is mechanically resilient, easy to connectorise and tolerant to dusty environment
 - Installation can be done by unskilled personnel

BUT

- The use of POF introduces significant challenges, due to physical transmission impairments
 - POF has much higher attenuation and dispersion with respect to GOF
- The ultimate technical target of the project is to optimize components, devices, transmission and protocol to make “POF optical modems” possible

- POF-ALL will also gauge market's potential and assess customers' requirement, to ensure that the project outcome will be an economically viable and cost-effective solution matching real user's requirements.
- An appraisal of the project's economic impact in Europe will be carried out, in order to evaluate how can a low-cost POF-based solution for edge access networks accelerate the accomplishment of EU's broadband-for-all policy.
- A constant work of information and dissemination will be carried out in order to attract interest, share results within EU and increase knowledge and accelerate adoption of POF-ALL's technical achievements.

Partners



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Paving the Optical Future with Affordable Lightning-fast Links





1. *Istituto Superiore "Mario Boella" (Italy)*
2. *Luceat SpA (Italy)*
3. *DieMount GmbH (Germany)*
4. *Plastic Optical Fiber Application Center (Germany)*
5. *Fraunhofer Institute (Germany)*
6. *Universität Duisburg-Essen (Germany)*
7. *Technische Universiteit Eindhoven (The Netherlands)*
8. *Fastweb SpA (Italy)*
9. *STMicroelectronics (Italy)*



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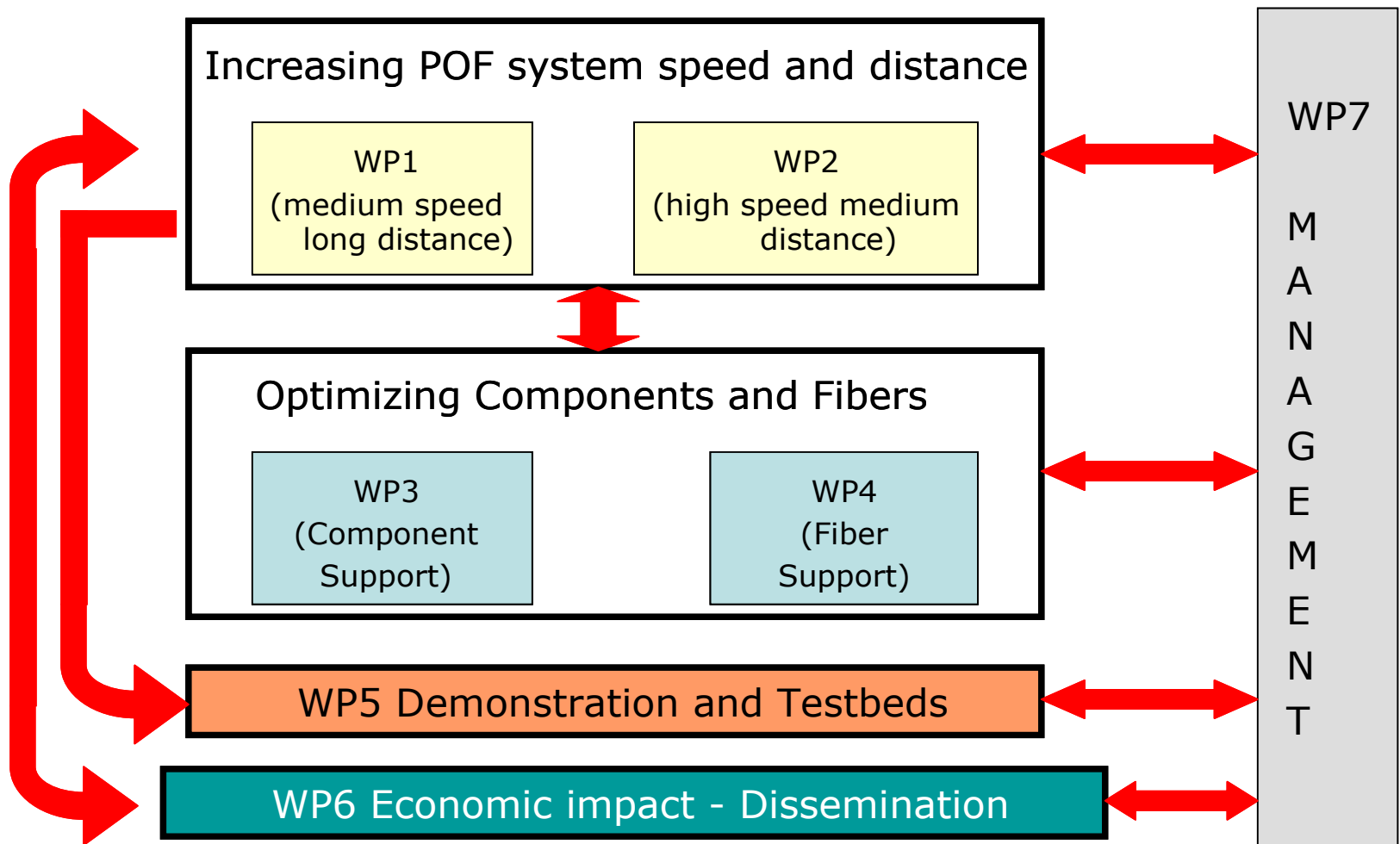


- The consortium includes:
 - two ICT research institutes (ISMB and Fraunhofer)
 - two SME companies specifically devoted to POF (Luceat and Diemount)
 - one large optoelectronic company (STMicroelectronics)
 - one FTTH national telecom operator (Fastweb)
 - three universities (POFAC, DUE and TUE)

- The consortium was created in order to put together:
 - Basic research capabilities (through research centers and universities)
 - Small companies working in the POF market
 - A big optoelectronic vendor (STMicroelectronics)
 - A perspective final user (Fastweb)

Activities

- The project is organized in seven work-packages:
 - WP1 – Advanced transmission techniques for 100 Mbit/s over long distances (300+ m)
 - WP2 – Module conception and transmission experiments of high speed data (1 Gbit/s and more) over intermediate distances (100+ m)
 - WP3 – Component support
 - WP4 – Fiber support
 - WP5 – Demonstration and Test-beds
 - WP6 – Economic impact, Dissemination
 - WP7 – Management



Impact

- Europe will take advantage of a low-cost and low-CapEx technology, ideal for telecomm operators to deliver true broadband to businesses and households
- Europe will be independent from extra-EU technologies for access networks implementation, as it is today with ADSL technologies
- European companies will be able to export knowledge developed by the POF-ALL consortium, promoting further investments and improving the competitiveness and technological role of Europe

Contacts

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