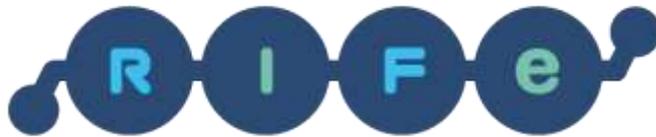




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architectuRe for an Internet For Everybody

D1.1: Project Presentation

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Abstract	RIFE is an EU-funded H2020 project which started in February 2015 and has a duration of three years. Our vision to make the Internet ubiquitous and accessible is a holistic one that couples social and economic incentives with ongoing and envisioned future Internet architectures. Through this coupling, we spur innovation for a wide range of new business models.
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Keywords	Future Internet architectures, Information-Centric networks (ICN), Delay-Tolerant Networks (DTN)
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Nature of the deliverable		R
Dissemination level		
PU	Public	✓
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to bodies determined by the RIFE project	
CO	Confidential to RIFE project and Commission Services	



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AT A GLANCE

Project title:

architectuRe for an Internet For Everybody

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EC contribution: € 2'930'626.25

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Further information:

<http://www.rife-project.eu>

Concept

The vision of RIFE is to address the problem of providing affordable and sustainable access to the Internet by realising an *architecture for an Internet for everybody* that enables access to information and services at economically sustainable price points unmatched by today's technologies, while also catering to challenges, such as intermittent connectivity, posed by the varying environmental challenges that are imposed on those who want to connect.

The RIFE project will provide innovations for an Internet for everybody, building on prior academic work and producing the following major outcomes:

1. the definition of a *unifying architecture* with clear interfaces provided to application developers and component manufacturers,
2. the development of *novel dissemination strategies* that jointly optimise bandwidth, storage and computation resources available, integrating diverse network environments into the single RIFE architecture, and
3. a set of service and application functions that will enable full utilisation of the RIFE architecture in real-life settings.

RIFE will produce the above outcomes through:

RIFE, architectuRe for an Internet For Everybody



- a RIFE *prototype platform* that will be implemented and tested against key performance indicators in both test bed and emulation settings, and
- an *operational trial within a community network* that is linked via real-life satellite connectivity.

Finally, we will *evaluate the commercial viability of the RIFE platform* to provide the basis for a sustainable value chain, and *establish RIFE as a key driver in the wider community* of practitioners and researchers in this space.

Technical Approach

Our approach to realise our vision to make the Internet ubiquitous and accessible is a holistic one that couples social and economic incentives with ongoing and envisioned future Internet architectures. Through this coupling, we spur innovation for a wide range of new business models, such as

- opportunities for non-governmental organisations and local governments (driven by social goals rather than economic) to become virtual network operators,
- new models for revenue creation from currently underutilised infrastructure, allowing lower-quality time-shifted services, and
- the introduction of micropayments and reverse payment models (for e.g. remote doctors to pay for additional capacity/QoS for video conferencing with patients) etc.

We will utilise well-researched practices, results, and working platforms in key networking areas, such as DTN and ICN, combined into a novel approach to provide such Internet services at unforeseen price points over a wide range of connectivity options. Our solid technological starting points, will allow for moving our ideas quickly from the *lab to the market* by deploying initial trials within the lifetime of the project and getting real users to experience the *Internet for Everybody*.

The RIFE recipe includes four main components; namely,

- our *unifying technical platform* to enable the services we envision,
- our *business platform* to enable the markets necessary to make these services holistically sustainable, and

- our *deployment platform* to provide a concrete and tangible proof of the readiness of our approach, aiding the engagement with the growing community in this space [GAIA] and interested stakeholders in the Internet value chain through
- our *engagement platform*.

Ambition

RIFE will advance the state-of-the-art in future Internet research in all the areas in which its main objectives lie. The focus of RIFE is centered on the convergence between what ICN and DTN can offer in a converged network architecture and what the networking community needs in order to address a fundamental challenge of the modern connected society; namely, providing access to the Internet to everybody, in particular including those who cannot afford such access under the current economic constraints of Internet service provisioning.

Impacts

RIFE touches on a number of areas that go beyond pure networking and Internet-related aspects: given the fundamental role that the Internet plays in modern societies and economies, if successful in enabling 'everyone, everywhere' access, its main benefits are likely to be society-wide. As a result, potential beneficiaries are numerous. These include: local and national government, the general public, industry, academia, and third sector organisations¹. The value is **international** in scope, as digital inclusion is desirable for all nations, developed and developing.

¹ The term "third sector organisations" is used to describe a range of organisations that are neither public sector nor private sector. It includes voluntary and community organisations (both registered charities and other organisations such as associations, self-help groups and community groups), social enterprises, mutuals and co-operatives.