



1<sup>st</sup> October 2013



# UCN

UCN is an EU-funded FP7 project which started in October 2013 and has a duration of three years. Its goal is to introduce User Centric Networking (UCN), a new communication paradigm that leverages in-depth user information to discover and deliver content in the most optimal conditions at any time, for a given user in a specific context.

## AT A GLANCE

### Project title (full):

User-Centric Networking

### Project coordinator:

Henrik LUNDGREN, Technicolor

### Partners:

Technicolor (FR)

Eurecom (FR)

Fraunhofer Gesellschaft zur Förderung der angewandten Forschung E.V. (DE)

Intamac Systems Ltd. (UK)

Martel GmbH (CH)

The Chancellor, Masters and scholars of the University of Cambridge (UK)

The University of Nottingham (UK)

Portugal Telecom Inovacao SA (PT)

National ICT Australia Ltd. (AU)

Institut national de recherche en informatique et en automatique (FR)

**Duration:** 1<sup>st</sup> October 2013 – 30<sup>th</sup> September 2016

**EC contribution:** €3'364'000.00

**Programme:** ICT-2013 Call 10

### Further information:

<http://www.usercentricnetworking.eu>

## Concept

This project introduces the concept of **User Centric Networking (UCN)**, which is a new paradigm leveraging in-depth user information to deliver novel content recommendation systems and content delivery frameworks. UCN recommendation and content delivery systems will leverage in-depth knowledge about users to help them **find relevant content, identify nearby network resources and plan how to deliver the actual content to the appropriate device at the desired time**. These systems will additionally account for **influences from users' social networks** on their content consumption.

The goal of this project is to design a UCN system architecture for user-centric connected media services.

The partners will build UCN upon three complementary research pillars: (i) **understanding user context**, (ii) **profiling and predicting user interests**, and (iii) **personalizing content delivery**.

## Description of work

Partners will develop a set of core components and deliver prototypes for a new generation of Internet-based applications and services in the digital media sector and beyond.

These core components include a Personal Information Hub (PIH), which contains a scalable, robust data store, a Publish-Subscribe system and audit mechanisms.

Other items to be developed are special data collectors that add semantics to the raw data and store this data into the PIH. We will also collect service-related data from users of NICTA's Social TV platform, Portugal Telecom's IPTV service, and Intamac's security and video surveillance platform

The project will develop a framework for service personalization. This includes data mining modules to leverage the rich user data with semantic information stored in the PIH to design and construct user profiles, novel mechanisms for social- and context-aware recommendations and a set of new mechanisms for user-centric network and delivery optimizations (e.g. resource management, content pre-fetching, etc.), content adaptation and local ad-insertion.

Partners will also develop a framework for ensuring that data is securely stored, and that access to this data can only occur in a privacy-preserving manner.

## Impacts

The UCN approach consists of optimizing data placement, discovery and delivery based on contextual (personal) user data, but also technical information. It is fundamentally different than what has been proposed in the past. It can potentially launch a new **technology transformation** that will make the Internet completely user-centric.

The project targets research along two directions: personalizing content discovery and personalizing content delivery.

The first direction is of particular relevance to individual users, because the act of consuming content is now a very individual activity that can happen anytime and anywhere.

The second direction is very significant because of the increasing complexity at the edge of the network. The UCN project provides a "middleware" layer that can communicate with backend services to pre-fetch content, identify nearby network resources and plan how to deliver the actual content to the appropriate device at the desired time.

The project will also have important societal impact. UCN will contribute to the European citizen's well-being through ubiquitous access to personalized applications and services.

It will also strengthen the position of the European industry through stimulating continued rapid growth of the ICT and multimedia markets, as well as providing **new market potential** through facilitating "cross-sector" innovation for a new range of personalized services.

The UCN platform has the potential to re-factor the current provider-centric architecture and introduce other players into the data-exploiting ecosystem. This will have a positive impact on employment and create new jobs based on the numerous opportunities for smaller providers and SMEs to build recommendation systems, delivery mechanisms, broker services, privacy applications, and other related services.