

# An Open Platform for Multiscreen Services

*Jean-Claude Dufourd<sup>°</sup>, Max Tritschler<sup>\*</sup>, Louay Bassbouss<sup>\*</sup>, Radhouane Bouazizi<sup>°</sup>, Stephan Stegligh<sup>\*</sup>*  
*<sup>°</sup> Telecom ParisTech – CNRS LTCI/TSI/MM/GPAC, <sup>\*</sup> Fraunhofer FOKUS/FAME*

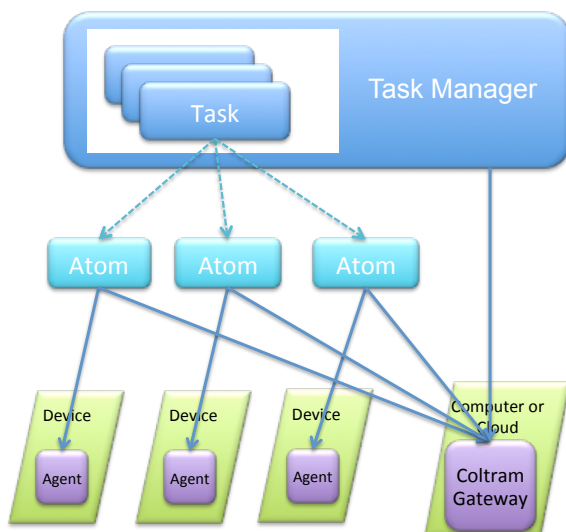
## COLTRAM

Multiscreen applications today are not much more than mobile applications that try to talk to the TV. Complex ad-hoc strategies are used to link the device with the TV, such as taking a picture of the TV screen. And just like mobile applications, multiscreen applications are mostly native and bound to a particular device. We believe there is much more to multiscreen than this: discovery of the devices and TV, communication between them, independence from the device/OS, distribution of the service across devices, all this should be part of a platform making multiscreen services easy for users and authors. The COLTRAM project develops a standard-based, open, cross-device platform. It features a new model of service, a collaboration of multiple applications (coming from Internet, broadcast, or local network) running on multiple devices, each application not tied to one device and able to move to another device without losing state. It has a new model for the home environment as a multipolar set of devices with specific features, taking into account device specificities and the dynamic side of the home network. We have implemented the COLTRAM model on top of UPnP and Bonjour, as a Java proxy to major browsers. It is available with open source.

## MultiScreen Specific Support

Developers of second screen/multiscreen applications today have only a limited set of options. They can only do native applications on each of their target device. They can only use cross-platform application frameworks and SDKs such as PhoneGap or Titanium. There is only little support for discovery of the other screen(s). There is no support for distribution of functionality among the various devices. There is no support for communication between services components. Applications very often need to be native, thus very dependent on the platform of the underlying device. There is no support for moving a running component from one device to a "better" device when it becomes available. What is needed is improved support for developers to create applications, not specifically for the second screen, but for multiple screens, applications that are truly mobile and not tied to a certain device or platform. The additional complexity of managing component deployment, communication and location-transparency should not be the sole responsibility of developers. Instead a platform for services composed of discoverable, distributed, communicating applications could alleviate the developer from these tasks, together with a model for platform-independent applications.

## A Better User Model



Another problem with the current situation around second screen services is the link between services and devices as most services are implemented natively. Two recent smartphones or tablets running different platforms will not allow a user to run the same service on both, unless the user procures a native app for each device. To think of a native multi-device service is impossible, unless the user has only devices running the same platform. New services are even locked out of older devices running older versions of a platform. This situation is optimal for the businesses, and detrimental to the users. We believe in proposing a new user model, where services are not bound to any device. On one hand, this means any device with a screen can be used as interface to a service, regardless of the availability of a native app. And on the other hand, services that run across a network of devices in a home become possible, even when the cooperation of different devices of different origins is required. We propose to rely on web technologies to implement the platform and the application model, as a way to ensure interoperability across a vast range of devices and operating systems, as well as a better user model.

## The project

The COLTRAM Project, Collaborative Transmedia in the Home, is a cooperation between Telecom ParisTech and Fraunhofer FOKUS, funded by the French ANR and the German BMBF. More information can be found at [www.coltram.org](http://www.coltram.org).