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Campina Grande, PB, Brazil – GMT 03:00

**Proposal Name:**

UPnP Support for KDE and Amarok

**Motivation for Proposal / Goal:**

The UPnP [1] standard is being widely used in various types of applications, such as multimedia, smart houses, etc. Also is being implemented by several vendors of many kinds of devices. For example, through UPnP a device can share its multimedia files with any other UPnP device. For the matter, a device could be a PC, a smartphone, a tablet or a console like Xbox and PS3.

In this context, both KDE and Amarok does not support UPnP. This project aims at providing some UPnP support for KDE and Amarok, making both of it able to share and retrieve multimedia content, such as music and video files. This can be achieved with the development of a UPnP KIO slave and the necessary infrastructure to make possible to any KDE application access the media available on the network. In addition, it is possible to make Amarok send rendering commands to a media renderer available on the network.

**Implementation Details:**

In order to achieve these goals, will be necessary to implement a KIO slave with UPnP capabilities. This slave will allow any KDE application to browse multimedia content from a UPnP device and to share their content with other UPnP devices. For this task, is intended the use of a framework developed here in the laboratory, called BRisa [2]. The Python version of the framework is widely used in the Maemo community and now a stable Qt version was released. But, the adoption of others frameworks like Coherence [3] and HUPnP [4] is not discarded.

After the KIO slave implementation, the goal is the development of a plug-in that will allow Amarok users to browse multimedia content from a UPnP device and to share their collection with other UPnP devices. For this plug-in, the Amarok's collection framework will be used. Based on previous experience with UPnP I consider that I am able to develop these tasks.

In the laboratory where I work [5] we have a long time of researching about UPnP. In addition, we already have all the infrastructure and devices for testing, such as Nokia N800/N810 Internet Tablets, smartphones, Xbox 360 and Playstation 3.

**Tentative Timeline:**

Task	Apr/09	May/09	Jun/09	Jul/09	Aug/09
Announcement of accepted student proposals		x			
Review of technologies (KIO, Solid, Brisa Qt, Amarok code, etc.)		x x x x			
UPnP KIO slave implementation			x x x x		
Tests, documentation and bug fixing				x	
Amarok UPnP collection				x x x	
Tests, documentation and bug fixing					x
Refactoring, documentation improvement, prepare for the merge					x x
Final GSoC evaluation deadline					x

**Obs.:** Each cell in the table represents a week of the month

**Do you have other obligations from late May to early August (school, work, etc.)?:**

My only commitment is with the masters course. Since UPnP is part of my research and the laboratory where I work encourages the collaboration with the open-source community, there is an agreement between me and my advisor about my participation on the program. There will be no conflicts of activities.

**About Me (let us know who you are!):**

I am a masters candidate in Computer Science at Federal University of Campina Grande, Brazil [6]. I have been using KDE and Amarok for a long time and I have become a enthusiast. I work at Embedded Systems and Pervasive Computing Lab, which encourages the open-source software development, focused on mobile computing context (in partnership with INdT – Nokia Institute of Technology, in Brazil). I have experience with C++, Python and Java programming languages and I have contributed with maemo community [7] in the context of ESbox [8] and PluThon [9] projects.

My personal goal in participating of the Google Summer of Code is to contribute with the diffusion of UPnP technology, improve my knowledge about it and contribute with KDE and Amarok projects.

## Links

- [1] <http://www.upnp.org/>
- [2] <http://brisa.garage.maemo.org/>
- [3] <http://coherence.beebits.net/>
- [4] <http://www.herqq.org/>
- [5] <http://embedded.ufcg.edu.br/indexen.html>
- [6] <http://www.ufcg.edu.br/>
- [7] <http://www.maemo.org/>
- [8] <http://esbox.garage.maemo.org/>
- [9] <http://pluthon.garage.maemo.org/>