Thesis Work Proposal

Remotely Controlled Set-Top-Box

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1. **Background**

Today digital TV receivers (Set-Top-Boxes) are mainly controlled by quite simple and feature limited remote control units (RCUs). The RCUs are normally using an IR interface, which means that you have to be close to the receiver and direct the RCU towards the STB to be able to control it.

At the same time we see the mobile phone and tablet computers being used in all kinds of applications. People always have their phones available and all new phones have IP connections.

The goal with this thesis work is to follow this course of events and make it possible to control the STB via a mobile phone (and/or tablet computer).

2. **Description**

The proposed thesis work should result in a system that makes it possible to control a digital TV receiver (STB), from an Android based mobile phone or tablet computer.

As part of the work an Android application should be designed and developed that communicates with the STB via the network. The application shall among other things be able to present an Electronic Program Guide (EPG) that allows the user to schedule recordings.

The work will also include the design and implementation of the communication protocol between the Android device and the STB and to add necessary support functions to the OmniTV platform (STB software platform).

As an optional feature, if the project time so permits, streaming of audio and video between the devices could be added.

The implementation work will be carried out in both Java and C. Previous experience with Android is qualifying.

3. **Scope**

The outlined activities should be suitable for a 2op thesis work involving two persons. Compensation after a successful thesis will be rewarded in form of a bonus of 15,000 SEK per person. A successful thesis could also lead to a future employment.

4. **About 27M**

27M Technologies is a market leading software and hardware design house based in Mjärdevi Science Park in Linköping, Sweden. 27M Technologies has extensive experience gained from having delivered many successful products in the digital TV industry. The highly qualified staff is able to take on both hardware and software design contract work and projects ranging from specific modules to complete turnkey solutions such as a complete STB or IDTV platform. The company’s core expertise is in the fields of DVB and DTV product design, real time embedded systems, embedded Linux kernel, device driver development and real time critical applications development in general.