Proposed 301 Project

IITT (Ironman image throw thingy)

Client: Department of Defence, Peace, Safety and Security, at the Council for Scientific and Industrial Research. (DPSS, CSIR)

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# Vision & Objectives

In the Ironman movie Mr Stark sat in court and grabbed a video on his mobile device and then threw it onto the big screen with a swipe motion.

We want to achieve the throwing bit of that action from and Android mobile device to a browser window.

Gesture control is an important human-computer interaction mechanism of the future. Though still in its infancy, lots of research is being done to make these interactions more natural. We would like to develop the capability to cast pictures onto bigger screens from a mobile device during presentations and demonstrations.

# Scope

The team will have to implement a Web application that runs on IIS and use a signalling framework (SignalR) to do push notifications to browser clients (big screens) and maintain web socket connections. The server also need to have an open socket connection to the Android device as HTTP or GCM (Google Cloud Messaging) will have too slow response for what we want to achieve.

An Android app needs to be developed that will connect to the server and provide the functionality to cast the picture to one of the big screen browsers. The Android device itself needs to be aware of its location and orientation relative to the screens. This will be critical to be able to point the device to a screen and have the app recognise which screen is being pointed to. The outcome of the project will depend on solving this technical problem in an innovative way. (We have some ideas to get you started)

# Recommended Skills

Programming: C# (server side), JavaScript (browser pages) and Java (Android app)

Some web development experience required. Android development experience and general Android knowledge will help a lot.

# Project Deliverables

A copy of the following documentation will be required upon project completion:

* Original tender document
* Requirements specification
* Architecture and design document
* Developer’s guide

In terms of software deliverables, we would require all the project source code.

# Intellectual Ownership

The source code can be made open source.

# Client commitment

At least one of the clients would be available twice a month for consultation. Consultation will take place at the CSIR campus during core business hour 8 am to 4 pm. Scheduling of meetings is left to the students, but bear in mind that both clients of the project are full time employees and cannot attend meetings on short notice.

The client will also provide an Android device to test with for the duration of the project.