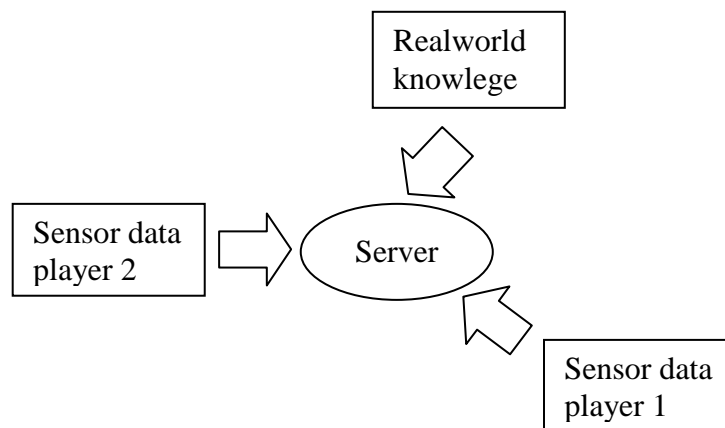


## Using 3G networks for mobile AR games

The purpose of this master thesis is to examine possibilities and issues with using 3G networks for mobile augmented-reality (AR) games. A mobile augmented reality game is a game that brings real world objects, relative locations or places, into the game experience. This is often achieved by combining a number of sensory inputs such as GPS positions, gyros, RFid tags and so on with the sensory input of other players or knowledge of the world (such as for example geographical data). These kinds of games are often implemented on mobile devices with limited performance and memory capabilities. A server solution is often necessary to enable access of other player's data or for handling resource consuming data such as geographical information and game content.



In this master thesis the issues of using a 3G network in mobile AR games will be examined by a case study on an existing game prototype called Backseat playground (BSP). Backseat playground is a game that is played by kids in the backseat of a car. The master thesis consists of two parts. Part one will investigate the problem from a theoretical perspective and answer questions such as:

- How will 3G latency of download time affect the timing of the game?
- What kind of compression streaming protocols could be used?
- How will the game handle connection failures of various lengths?
- Which game modules should be situated on the server and which ones on the client based on resources on client, bandwidth, cost for network usage and licensing cost of data?

Part two will consist of implementing and testing some or all your solutions in the BSP environment.

## ***BSP background***

A lot of kids today spend a considerable time in traffic. To pass time they often engage in different activities such as playing computer games or watching movies on portable DVD:s. The purpose of Backseat playground is to engage kids in a game that utilizes the journey experience by creating an augmented sound environment on the outside landscape. For this several space consuming resources are used such as geographical data, sound effects and several text to speech engines.

## ***Interactive Institute***

The master thesis will be carried out on Interactive Institute's mobility studio in Stockholm. This means that you will have the ability to experience working within an internationally successful research group and on one of Sweden's most creative workplaces, a place where we in a playful manner, explores mobile applications of tomorrow.

Information regarding the Interactive Institute can be found on [www.tii.se](http://www.tii.se), information regarding the Mobility studio on [www.tii.se/mobility](http://www.tii.se/mobility). The BSP project is described on [www.tii.se/mobility/BSP/](http://www.tii.se/mobility/BSP/).

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