Dynamic Resolution

And its uses in Firs Person camera applications

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## Introduction

The controls of robots have been an ever-evolving phenomenon over the years. While at first, we were tethering them to a bunch of wires, with only a joystick to control; we now can let them do the most advanced tasks on their own.

Vision still is one of the hardest hurdles to overcome when it comes to robotics. Many robots are past the point of the need for human eyes. Though a niche group of robots still rely heavily on them. This group can be described best as a group of “competitive” robots. Like sports robots, or racing robots.

Our sports robot still has a need for human eyes. Commonly, these eyes are from the side of the field. However, we would like to upgrade our eyes, to a first-person perspective. Essentially being a football player on the field, through the eyes of the robot.

## Problem

To fetch our camera livestream to utilise it for first person driving, we use the internet. Internet has many benefits, though downsides also are abundant. One of the downsides to internet is, that it can become unstable very quickly.   
This poses a risk to our camera stream, since it could likely be negatively impacted by an unstable network.

Luckily, there are systems in place to lessen the load a camera stream puts on a network; though this is not yet in place in our system.

## Proposition to solve problem

Create a system which reduces the load the camera stream puts on a network. This can be done in various ways, though the underlying outcome is that the amount of data sent over a set period of time needs to decrease in contrast to the amount of data sent previously.

Both the network analysis and the adjustment of the amount of data sent should be in a feedback loop. This ensures that the system is always online and can work without any manual input.

## Planning

13 dec: First draft of this document, started researching network specifics

20 dec: first draft of network research, apply some knowledge directly into creating a network analyzer

27 dec: -

5 jan: -

12 jan: first POC of network analyzer

19 jan: integration with video streamer

26 jan: video streamer is responding to network analyzer