



**Project Title:** iTRAC: Intelligent Compression of Traffic Video

**Principal Investigator:**

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**Center Project Number:** Y2-03

**Award Amount:** \$ 74,910

**Start Date:** April 1, 2009

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**Project Summary**

Non-intrusive video imaging sensors are commonly used in traffic monitoring and surveillance. For some applications it is necessary to transmit the video data over communication links. However, due to increased requirements of bitrate this means either expensive wired communication links are used or the video data are heavily compressed to not exceed the allowed communications bandwidth. Current video imaging solutions utilize old video compression standards and require dedicated wired communication lines. Recently H.264 (the newest video compression standard) has been proposed to be used in transportation applications. However, most video compression algorithms are not optimized for traffic video data and do not take into account the possible data analysis that will follow (either in real time at the control center or offline). As a result of compression, the visual quality of the data may be low, but more importantly, as our research efforts in vehicle tracking have shown, the tracking accuracy and efficiency is severely affected. We propose to develop a set of algorithms (implemented in the form of a software module) that will operate within the constraints of the H.264 video compression standard. It will aim to improve the performance of traffic tracking applications while using the same transmission bandwidth or equivalently maintaining the same level of performance while reducing bandwidth usage. The output of our project will be a software module that will be integrated into the logic of hardware video compression encoders.