

Gianmatteo Cannavacciuolo, Antonio Giuseppe Varrella

Politecnico di Torino

Category: Road

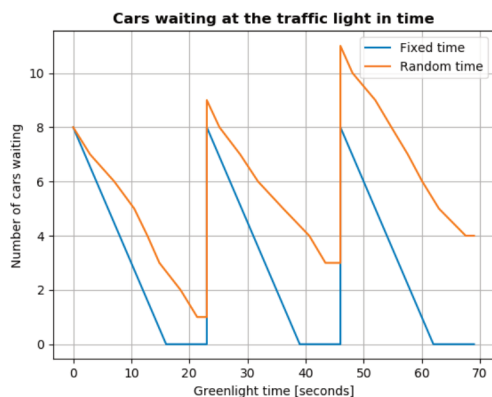
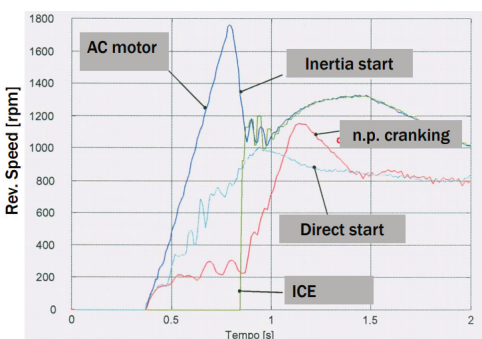
Country: Italy

Research Area 3: Automation and Robotisation

Idea Number: 125

Smart Platoon Re-Start

In crowded cities, traffic jams occur regularly and most critically at the traffic light, where the first in line hesitates. The absence of a smart re-start, however, is frustrating for those who are in a hurry and hence start to push the accelerator pedal, going full throttle mode. When this happens, a considerable amount of pollutant emissions are released because of the temperature of the engine. Considering the technologies currently available, we found a simple but effective solution which re-interprets a pre-existent knowledge of the topic. Imagine how a communicative traffic light could influence the quality of the re-start: the first vehicle would be specifically informed about the upcoming green light such that, through an empowered system of Stop & Start, it could manage to be ready as soon as the light will turn green. In addition, with an on-board system of communication, the first vehicle would be able to share the information with the whole queue, creating a sort of platoon re-start. Environmentally, an electric engine is forecasted to substitute the common starter, helping the Internal Combustion Engine (ICE) reach the best working point. On the whole, we believe in the possibility of improvements in terms of the number of vehicle per traffic light cycle, up to 60% in medium traffic condition, and of an equivalent reduction of pollutant emissions.



Key Characteristics

Platoon re-start • Stop&start • Smart re-start