



Master's Thesis: Train Wireless Camera Monitoring

Background

The thesis work relates to the railway industry and is the development of an onboard solution based on access to a public cellular network. It should include a wireless camera monitoring old freight cars and sending pictures to the locomotive only when needed.

The train cars have no train control management system, and a train can be very long. Moving pictures are for example useful for monitoring sensitive train cargo, when reversing a train without an outlook, checking that the train tail is intact, etc.

Objective

The work aims at developing a prototype being capable of sending moving pictures from rigid mobile camera units to a mobile locomotive cab screen. Battery power saving functionality is key for this solution, sending pictures only when needed and only from the selected mobile camera unit.

The prototype is lab developed, using an Android 10 inch Pad for the cab and a couple of Android Smart Phones to emulate the rigid mobile camera units (attached anywhere on the train). Additional battery, power supply, and solar panel are other options.

Application

Prerequisites:

- Java programming in Android environment.
- Security aspects (pairing, encryption, etc).
- Basic cellular telecommunication knowledge.
- Experience from field tests would be useful.

Two persons are suitable, one with focus on Java/Android and one for Security.

Effort: 30 HP per person.

Company

[Bombardier Transportation](#) is a leading company in the Rail business, delivering onboard and wayside systems, from subway to mainline systems.

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