GeoEye 2: software development for camera and image processing
Since 2013 Secure in Air has been developing products and services to improve maintenance (processes) and infrastructure of the Dutch Railways. This project is called GeoEye. GeoEye is also the name of the system that consists of an innovative camera (hardware) and software solution. A working system has been tested for three years now. To control this camera we use a Software Development Kit (SDK) from a commercial supplier. To replace this SDK we want to develop our own software platform with the help of a TU/e student. Both Bachelor and Master students are welcome to apply for our question depending on the what part of the project you want to do. It's also possible to have contact with the end-users and managers of the GeoEye.

GeoEye, how does it work?
- Static monitoring: Scanning and checking the proper working of the switch heaters and surrounding areas.
- Dynamic monitoring: Checking parts in the rails that release heat when a train is passing by. For example, 1000 Ampere is a normal current. However, this could mean there is a defect due to insufficient maintenance.
- Live view: With this mode we can check the correct working of the switches. It's also been used to detect unwanted persons (vandalism)
- At night, to protect the safety of the maintenance engineers.

What will you work on and required skills?
General: Experience with programming languages as C++ and/or Python.

The complete project has been split into 3 parts published separately named 1), 2) and 3). In this call:
2) Trainee (BSc): To develop the backend of the software platform. Experience with different communication protocols and interfacing from camera's.

Compensation:
There will be a monthly fee of €200 and an extra bonus fee of €1500 when the project is completed successfully and the minimum required specifications are met. This bonus fee can be higher when your results are above the minimum required specifications. We are open to discuss future developments with you to keep a connection with this project.

More information can be found at www.geoeye.nl

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