AIR-PORTAL Internship Description
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AIR-Portal (Demo site: https://airportal-demo.stcorp.nl) is an Earth Observation service developed and exploited by S&T. In AIR-Portal, inputs from various external sources (atmospheric models, land-use atlases, meteorological data, sensor data) are combined using data fusion in order to create high-resolution air quality data products such as pollution concentration grids, time series, and various derived metrics.

We are looking for an applied computer science (or otherwise qualified/interested!) student to join the team for an internship of at least four months, with the aim to improve and extend the project's current use of devops methods and technologies, especially with respect to the orchestration of the AIR-Portal backend, the deployment of the AIR-Portal clients, and the operational monitoring of both.

The AIR-Portal system is implemented using a combination of Python (for the backend), TypeScript (for the client) and bash scripts (for the orchestration). In this internship, the student will be responsible for analysing the design of our devops chain, comparing it to current and future requirements, and then suggesting, designing, and implementing improvements to the system that will increase robustness, efficiency, and operator "situational awareness".

Key technologies and expected/possible tasks are:

- Containerisation (we make extensive use of Docker)
- Automated testing (unit/integration/system tests)
- Continuous Integration (using Gitlab CI)
- Continuous/Automated Deployment
- Automated periodic reporting (in mail, Slack, etc.)
- Orchestration (porting shell scripts to Python)
- Optimisation, verification, and validation of service deployments
- Monitoring, dashboarding, and alerting
- Development of supporting tools (esp. w.r.t. reporting)

We expect the student to be proactive in their analysis of the system, and come up with their own suggestions and ideas. The detailed specifics of the work to be done will be determined together with the student after the first few weeks of the internship.

For more information about AIR-Portal and this internship, please contact Dr. Edo Loenen <info@air-portal.nl>.

For general information about S&T: <https://www.stcorp.nl>