

Autonomous Response Orchestration for programmable networks

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Basic information

Division:	Technical Sciences – Cyber Security & Robustness
Location:	The Hague
Level of Experience:	Master's graduation project
Education:	University, technical degree (computer science, electrical engineering)
Duration of project:	6 - 9 months

WHAT WILL YOU BE DOING?

Given the complexity and continuously evolving cyber threat landscape and the speed at which cyber-attacks occur, automation to aid human analysis and execution of response actions at machine-speed is becoming more and more seen prerequisite.

This master thesis project takes place in the context of NWO SARNET project on Security Autonomous Response with programmable NETworks. Within the project you will work on development of technology and tools for autonomous response to cyberattacks using SDN / NFV, and implement in TNO's NFV/SDN lab some response scenario's as a proof-of-concept (e.g. initiate additional monitoring, automatic containment and recovery). The focus is particularly on the orchestration function (e.g. ETSI MANO, OpenC2), although you will also need to address the analytical part (i.e. determining how to best respond to an attack).

WHAT DO WE REQUIRE OF YOU?

You are working on a Master's degree on computer science (or related) and you would like to work on networking and ICT security. You are familiar with information security, experience with programming and IP networks technology. You are analytical and you are capable of working autonomously. In addition, you have good communication skills and you are creative and innovative. However, most important is your motivation to work in the cyber security field.

WHAT CAN YOU EXPECT OF YOUR WORK SITUATION?

TNO is an independent research organisation whose expertise and research make an important contribution to the competitiveness of companies and organisations, to the economy and to the quality of society as a whole. Innovation with impact is what TNO stands for. With 3000 people we develop knowledge not for its own sake but for practical applications. To create new products that make life more pleasant and valuable and help companies innovate. To find creative answers to the questions posed by society. We work for a variety of customers: governments, the SME sector, large companies, service providers and non-governmental organisations. Working together on new knowledge, better products and clear recommendations for policy and processes. In everything we do, impact is the key. Our product and process innovations and recommendations are only worth something if our customers can use them to boost their competitiveness.

The department of Cyber Security & Robustness (CSR) employs approximately 50 professionals who work on issues related to the security of IT networks, systems and smartphones to help our clients

and associates take charge of their ICT security, detect fraud, review their architecture or develop a security design for new systems. The division is located at two locations: Groningen and The Hague.

WHAT CAN TNO OFFER YOU?

You want to work on the precursor of your career; a work placement gives you an opportunity to take a good look at your prospective future employer. TNO goes a step further. It's not just looking that interests us; you and your knowledge are essential to our innovation. That's why we attach a great deal of value to your personal and professional development. You will, of course, be properly supervised during your work placement and be given the scope for you to get the best out of yourself. Naturally, we provide suitable work placement compensation.

APPLICATION PROCESS

For this vacancy it may be required that the AIVD issues a security clearance after conducting a security screening. Please visit for more information the AIVD website.

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