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|  | Graduation assignment |
| **Title** | Attribute Based Encryption in IoT |
| **Level** | Master |
| **Education** | Software Technology |
| **Affinity** | Software Modularity, distributed Systems, Software Security |
| **Background** | The software department of the Technical Unit Processing is responsible for the software development in radar- and optical sensors for worldwide navies- and air defense systems.  This is a shared assignment of Thales and Luminis. Luminis is a software house with a clear focus on research and innovation. Luminis is involved in several Open Source projects related to OSGi, such as Apache Celix, Apache Felix and Apache ACE. |
| **Overview** | With the advent of IoT-based solutions, it is becoming clear that it introduces a number of deep challenges for the security aspect of these solutions. Because of the sheer volume, the heterogeneous character and the inherent geographical dispersion, the classical security strategies, which are based on a secure perimeter with a centralised identity strategy, fail to deliver sufficient security. |
| **Assignment** | One of the principles for new resilient security strategies is that they need to be risk-adaptive and highly automatable (Stronger: anything that is not automated is not going to scale sufficiently). One decision than can be automated is to grant access to data based on an attribute-based encryption approach (ABE). In ABE, a user has a set of attributes in addition to its unique ID. Based on a given policy, it grant parties access to specific parts of the data if it has the correct combination of ID and attributes.  This research is expected to design and implement an ABE solution that is capable of using different policies and attribute-schemes in order to increase the risk-adaptive aspect of a security strategy by granting access to parts of data. |
| **Location** | Arnhem / Hengelo (optional) |
| **Department** | Luminis / Sensors – Radar Engineering & Integration - Technical Unit Processing |
| **Department Internship coordinator** | Rene van Hees ([rene.vanhees@nl.thalesgroup.com](mailto:rene.vanhees@nl.thalesgroup.com)) |
| **Internship attendant** | Marcel Offermans (Luminis) / Pepijn Noltes (Thales) |

If you want to apply for this assignment, send a mail with your C.V. and title of the assignment including a motivation why you choose this specific assignment.