

### PhD-FSTC-2019-25 The Faculty of Sciences, Technology and Communication

#### DISSERTATION

Defence held on 09/04/2019 in Esch-sur-Alzette to obtain the degree of

## DOCTEUR DE L'UNIVERSITÉ DU LUXEMBOURG EN INFORMATIQUE

by

#### Aleksei Nikolaevich UDOVENKO

Born on 12<sup>th</sup> of January 1992 in Tiksi (Russian Federation)

# DESIGN AND CRYPTANALYSIS OF SYMMETRIC-KEY ALGORITHMS IN BLACK AND WHITE-BOX MODELS

#### Dissertation defence committee

Dr Alex Biryukov, Dissertation Supervisor *Professor, Université du Luxembourg* 

Dr Gregor Leander Professor, Ruhr-Universität Bochum

Dr Jean-Sébastien Coron, Chairman *Professor, Université du Luxembourg* 

Dr Matthieu Rivain Cryptographer, CryptoExperts

Dr Volker Müller, Vice Chairman Associate Professor, Université du Luxembourg