

# Summary

Kristian M. Thomsen and Christoffer Ndūrū

May 30, 2016

## 1 Summary

In May 2011 the Economic Interest Group discovered that smart cards stolen in France were being used for transactions in Belgium. It turned out a group of criminals had managed to bypass the PIN verification on the cards and could use them for purchasing items, which they would later sell on the black market. Since smart cards are a widespread technology, for example in credit cards, abuse of them poses serious risks to both the banking industry, but also to consumers.

This report presents several known fault injection countermeasures and proposes a new countermeasure. Also presented is a solution to automate safety analysis of Java Card programs, by inserting attacks into code modified with countermeasures, and modelling them in the modelling tool UPPAAL.

Improvements to the solution are also offered to allow future work along with advice on how best to proceed.