

**An improved smartcard for the South African Social Security Agency (SASSA):
A proof of life based solution**

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ABSTRACT

The rapid growth of biometric technologies and wide accessibility of capturing devices has resulted in biometric systems becoming increasingly common in different applications. This has led to the introduction of ATMs in countries like Japan that have adapted biometrics, whereby fingerprints are used instead of PINs. Whilst in South Africa, biometrics is still not regulated in financial sectors. South Africa has one of the largest cash transfer systems in Africa, whereby approximately 16, 900, 000 grants are paid out monthly. SASSA is responsible for the administration and payments of grants with the help of a third entity, namely; Cash Paymaster Services (CPS). These grants are a way of fighting against poverty and recipients are known as beneficiaries. SASSA has a challenge when it comes to proving whether a beneficiary is still alive. Cases of impersonation have been identified, which led to money being paid out to people who are not eligible to receive it. Thus, the main aim of this paper is to propose a solution for this challenge. Therefore, an improved biometric-based smartcard is presented as a solution. Whereby, fingerprints are used to activate a smartcard before it is inserted into a machine (POS/ATM). This approach allows the owner of the card to be the only one that can use the card, which at the end links the transaction to the card-owner.