

Biometric Consortium 2004 Conference

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Topic: CESG Biometric Security Capabilities Programme: Method, Results and Research Challenges

Abstract: The performance and security of biometric technology provided by commercial products and systems is extremely important if biometric authentication is to be a viable option for use by UK Government. To support these and other uses of biometrics by UK Government, CESG, the UK National Technical Authority for Information Assurance has been undertaking a programme of work to investigate the security features and levels achievable in current biometric products. The programme has sought to gain from the expertise and support of the developers, while developers would gain from an independent investigation of their systems, the results of which might help to improve the security of their products. The principal aim of the programme has been to develop a methodology for the systematic, consistent and repeatable investigation of the security capability and features of biometric technology and products. Specifically, the methodology is aimed at facilitating formal evaluations of biometric systems such as Common Criteria.

Results from the programme have highlighted a number of security concerns. These need to be addressed if UK Government is to implement such systems for authentication. Here we present some initial results from our investigations, highlighting the security implications and suggested remedies to these shortfalls. We also highlight suggested research challenges to biometrics in light of our results – specifically, liveness checking and anti-spoofing techniques demand attention and further research for enhanced security capabilities.

Biography: Matthew joined CESG in September 2002. Since then, as part of CESG's overall biometrics programme, he has worked primarily on the investigation of biometric security capabilities. This has involved setting up a laboratory to conduct practical investigations of current biometric products. Results of the practical work have been feeding a technical methodology, which Matthew has been writing to facilitate evaluations of biometric security systems.

Matthew received his BSc Honours degree in Computer Science from the University of Wales, Swansea in 2001. He furthered his academic study with an MSc in Computer Science at Exeter College, Oxford University, where he majored in formal methods for system specification and design. He is a member of the British Computer Society.