



# **Current COTS Technology Gaps: A Department of Defense Perspective**

**Sam Cava**

**Director**

**U.S. Department of Defense**

**Biometrics Fusion Center**

**Biometric Consortium 2004**

**September 20, 2004**

The views presented are those of the speaker or author and do not necessarily represent the views of DoD or its components.



# COTS Products in DoD

**BIOMETRICS**  
DEPARTMENT OF DEFENSE

- DoD policies and directives emphasize the need to utilize COTS products
- The DoD must often rely upon industry to provide complete lifecycle support of systems
- Gaps exist between DoD's biometric needs and COTS technology



# Current Gaps in COTS Technology – A DoD Perspective

The DoD has unique requirements that are not fully addressed by current COTS biometric products





# Multi Biometric

**BIOMETRICS**  
DEPARTMENT OF DEFENSE

- **Different situations may warrant the use of different biometric modalities**
  - **Often a single application is expected to support a variety of functions and modalities**
    - **Multi-modal (finger, iris, voice, face, etc.) collection, search and storage**
    - **Multi-instance (same biometric)**
    - **Multi-algorithm**
    - **Both quality decision and score level combined**



## Multi Biometric – cont'd

**BIOMETRICS**  
DEPARTMENT OF DEFENSE

- **In accordance with recent recommendations from INCITS M1, DoD seeks multi-biometric systems that are:**
  - **Designed and evaluated based on common performance requirements**
  - **Designed so that a single biometric subsystem can be separately upgraded**
  - **Able to accept historical information for a given user, such as scores and processing times**
  - **Plug and Play sensor capability**



## High Quality

**BIOMETRICS**  
DEPARTMENT OF DEFENSE

- **Quality of biometric data is crucial for DoD implementations:**
  - Quality measure should be used as a predictor for the matcher performance
  - Quality measure will allow poor image acquisition to be corrected
  - Prevents overloading the system with bad data
  - Currently, there is no standardized method for measuring quality
  - M1 recently created an ad hoc group on data quality



# Tactical Environment

**BIOMETRICS**  
DEPARTMENT OF DEFENSE

- **The deployment of biometrics to the field presents unique challenges**
- **System developers should consider:**
  - **Minimum power consumption**
  - **Portability (smaller footprints)**
  - **Ruggedization, Durability**
  - **Harsh environments**
  - **Ease of Use!**



## Scalable

**BIOMETRICS**  
DEPARTMENT OF DEFENSE

- **Fewer and fewer DoD biometric deployments are isolated applications without requirements for access to larger systems**
- **The larger the target population, the greater the challenge to collect data of high quantity and quality**
- **As more data is collected, the management of that data becomes more critical; must avoid info overload**
- **Standardization and interoperability are key tenets to success**



# Interoperable

**BIOMETRICS**  
DEPARTMENT OF DEFENSE

- **There is a growing need for systems to be able to communicate across services, theaters, and time**
- **The need to communicate across government organizations is also growing**
- **Future systems will require the ability to rapidly integrate data from a variety of sources and present the resulting information in a form useful to command decision makers**
- **To achieve interoperability the biometric COTS product should be based on:**
  - **Commercial standards**
  - **Open system architecture**



# Rapid Biometric Capture

**BIOMETRICS**  
DEPARTMENT OF DEFENSE

- **Collection devices need to consider many factors:**
  - Ease of operation
  - Time sensitive tactical situations
  - Enrollment of uncooperative individuals
  - Portable / Low power operation
- **Transaction management is critical**
  - Systems often operate in bandwidth-limited environments
  - Traceability is a must



## Conclusion

**BIOMETRICS**  
DEPARTMENT OF DEFENSE

- **DoD relies heavily on COTS products**
- **DoD use of biometrics devices is on the rise**
- **DoD has unique requirements**
- **Enterprise scale requirements are emerging**
- **Standardization and interoperability are a must**
- **DoD Biometrics would like to work with industry to create a win/win environment**



# Contact Information

**BIOMETRICS**  
DEPARTMENT OF DEFENSE

## DoD Biometrics

[www.biometrics.dod.mil](http://www.biometrics.dod.mil)