Biometrics Within the Wireless and Mobile Computing Industry

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Qualcomm Acquires Ultra-Scan Corporation

- In March of 2013, Qualcomm announced the acquisition of biometric industry veteran Ultra-Scan Corporation, located in Buffalo, NY

- As a direct result of this acquisition, Qualcomm
  - Has access to 30 years of biometric subject matter expertise
  - Has ownership of a complete portfolio of hardware and software intellectual property as it pertains to livescan fingerprinting, AFIS systems and multimodal fusion technology
  - Will lead the commercialization and manufacturing of the technology

- Establishes a leadership position for Qualcomm within the biometric industry, creating a Center of Excellence for Biometric Technologies in Buffalo
Who is Ultra-Scan?

- Founded in 1989 and pioneered the use of high frequency ultrasound as a superior method for capturing livescan fingerprint imagery
- Have focused R&D on development of a mobile livescan capture technology
- Working closely with the DOD for over 6 years, achieved FBI Appendix F certification of the first non-optical four finger scanner in the history of the industry
- Original Ultra-Scan team intact and focusing on future commercialization efforts for mobile biometric technologies
Who is Qualcomm?

- Founded in 1985
- HQ in San Diego, CA with locations in 146 countries
- #1 in wireless technology
- World’s largest fabless semiconductor company
- > 25,000 employees worldwide
- $19.1B in revenue in 2012
- Strong presence in DOD with QGOV division
Fingerprint Biometrics – the Technology Gap

- Early livescan applications
  - Primarily law enforcement based
    - Indoor
    - Attended capture process with trained users
    - Captive subjects
    - Controlled environment with ability to ensure clean fingers
    - Sufficient time for capture of fingerprints of acceptable quality

- Growth of the application space
  - Landscape of biometric fingerprint application requirements is constantly evolving
  - Has generated the need for the development of new fingerprint sensor technologies
Fingerprint Biometrics – the Technology Gap (Cont’d)

- **The technology gap**
  - Transition to a highly mobile environment
  - Impacts both government and consumer applications
  - Has resulted in unmet performance expectations

- **Mobile environment**
  - Generally uncontrolled environmental and sensor/finger conditions
    - Sunlight
    - Humidity extremes
    - Temperature extremes
    - Finger/capture surface contamination
    - Ghost or latent images
  - Size and power constraints
  - Frequent need for multiple captures to obtain fingerprints of sufficient quality
Ultrasonic Fingerprint Imaging Technology

- Ultrasonic TFT-based sensor
  - 500 dpi
  - True 3-dimensional resolution
  - Scalable to virtually any size
  - Low manufacturing cost
  - Simple Control Electronics

- Benefits of ultrasound
  - Maintenance-free operation
  - Highest image quality in a tactical or consumer environment
  - Low power requirements
  - Four finger sensor
    - >90% reduction in size
    - >85% reduction in weight
    - …as compared to existing finger solutions
Fingerprint Standards

- Qualcomm is interested in helping to expand the body of knowledge as it relates to fingerprint standards
  - Government
    - Augment and advance existing well-established standards
      - Appendix F and PIF
    - Take advantage of enhancements such as three-dimensional resolution
  - Consumer
    - Lead the development of new standards
    - Specific to the consumer market
      - Appendix “Q”
Thank You

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