

# **NIST 2006 Speaker Recognition Evaluation**

## **Cross-Channel Results**

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[www.nist.gov/speech/tests/spk](http://www.nist.gov/speech/tests/spk)

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## **Outline**

- Yesterday
  - Evaluation Review
  - Evaluation Results
  - Mothballed Systems and History Plots
  - Language Effects
  - Summary
- Today
  - Cross-channel Results

## Cross-Channel Problem

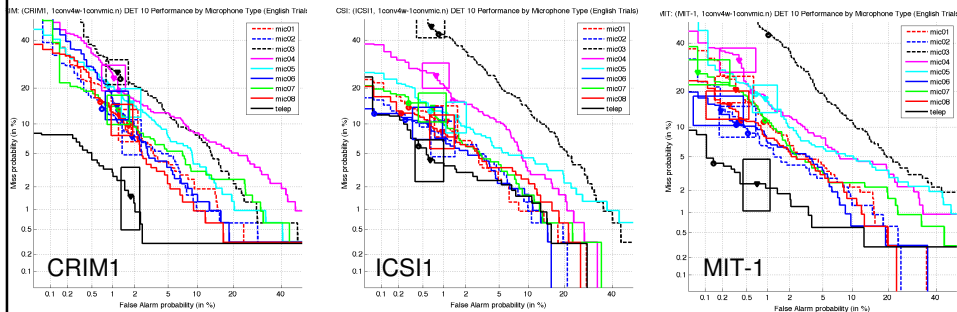
- Handling speech from different channels is a key part of the challenge of speaker detection
- Of interest to the sponsor
- But of how much interest to the participants?
- Some applications (e.g. forensic) are likely to involve speech from particular, perhaps unusual, channels of limited quality
- Can this speech be matched with speech recorded under more standard conditions?

## Microphones Used

- 1: AT3035 (Audio Technica Studio Mic)
- 2: MX418S (Shure Gooseneck Mic)
- 3: Crown PZM Soundgrabber II
- 4: AT Pro45 (Audio Technica Hanging Mic)
- 5: Jabra Cellphone Earwrap Mic
  - Jabra mic (#5) at LDC had a battery pack malfunction
- 6: Motorola Cellphone Earbud
- 7: Olympus Pearlcorde
- 8: Radio Shack Computer Desktop Mic
- Conversations were recorded simultaneously with these eight microphones and over the telephone
- *Note: NIST does not endorse or evaluate commercial products*

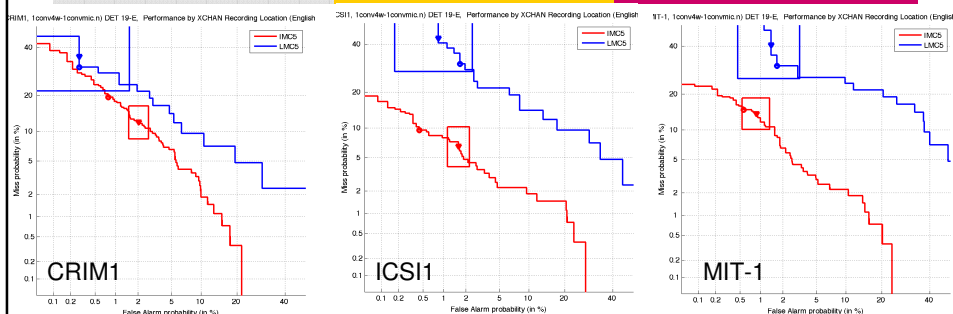
# Cross-Channel by Microphone

## 1conv4w Training



- Microphone 3 (Crown PZM Soundgrabber II) apparently had a problem
  - But CRIM seemed to handle it a bit better than others in the area of the actual decision point
  - Claim on web site is “amazing sound quality at a super-low price”
- Performance was relatively poor for microphone 4 (hanging)
- Microphone 5 (Jabra) had lagging overall performance due to its malfunction at LDC

# Cross-Channel by Collection Site

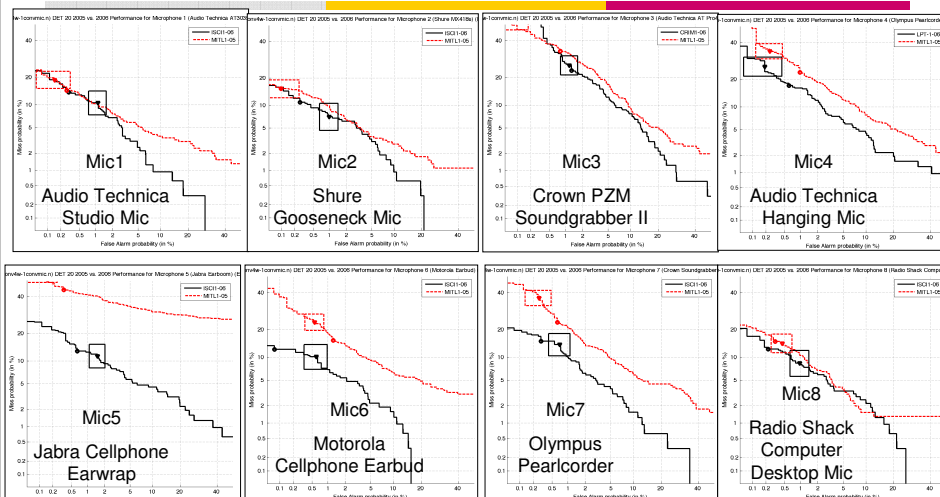


- Most data used this year was collected at ICSI (311 conversations), only a limited amount of LDC data used (54 conversations)
- Limited LDC data makes cross site comparison difficult
- The only clearcut difference was for microphone 5 (Jabra Cellphone Earwrap) due to its malfunction at LDC

# Cross-Channel History

- We rescored the 2005 results because of errors in the previous scoring
- Plots compare best 2005 and 2006 performance

# Cross-Channel History



- Big gains in 2006 are for mics 4, 5, 6, 7 – the hanging or worn ones
- Was this due to better microphone placement or to algorithm enhancements?

## Summary

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- Some progress seen this year on handling cross channel speech
- Results may be sensitive to microphone placement
- Can interest in this problem be encouraged from more participants?