

Multilingual Processing Systems as Mediators in Human Communication

November 22, 2006

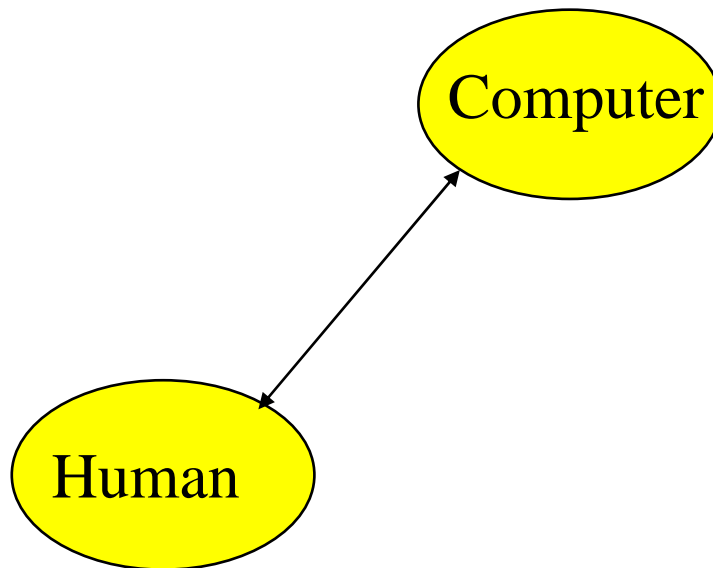
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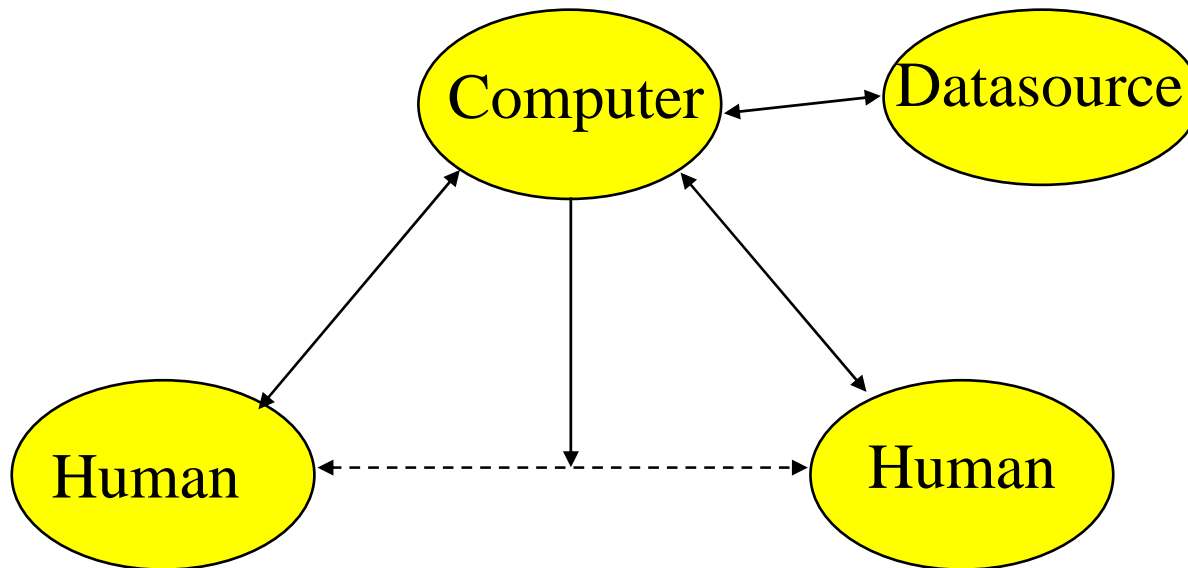
<http://www.interact.cs.cmu.edu>



Present Human-Computer Interaction







The CHIL Team:



Universität Karlsruhe (TH)

Fraunhofer

Institut
Informations- und
Datenverarbeitung



DAIMLERCHRYSLER

TU/e

technische universiteit eindhoven



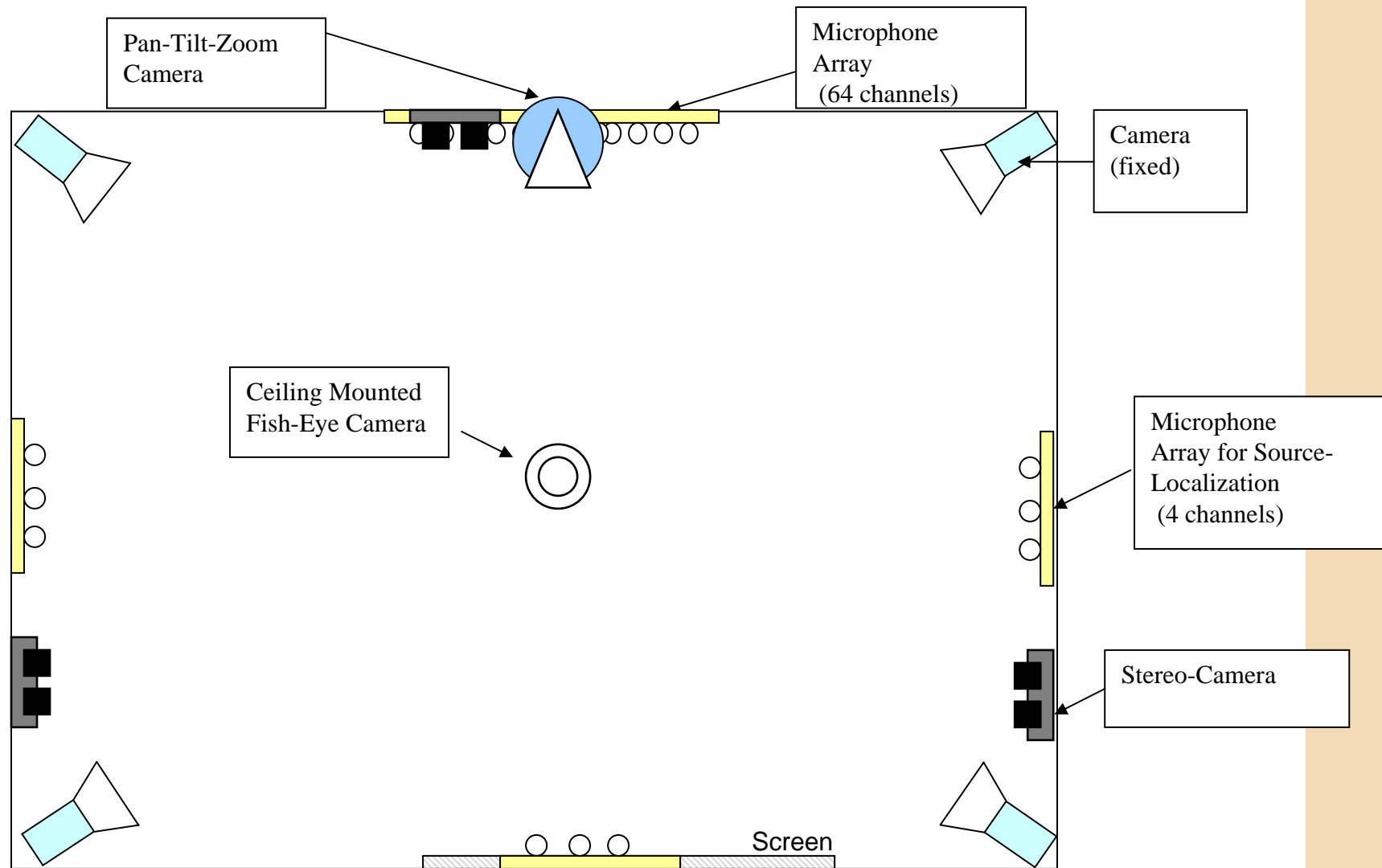
Centre de Technologies i Aplicacions del Llenguatge i la Parla
UNIVERSITAT POLITÈCNICA DE GATLUNYA



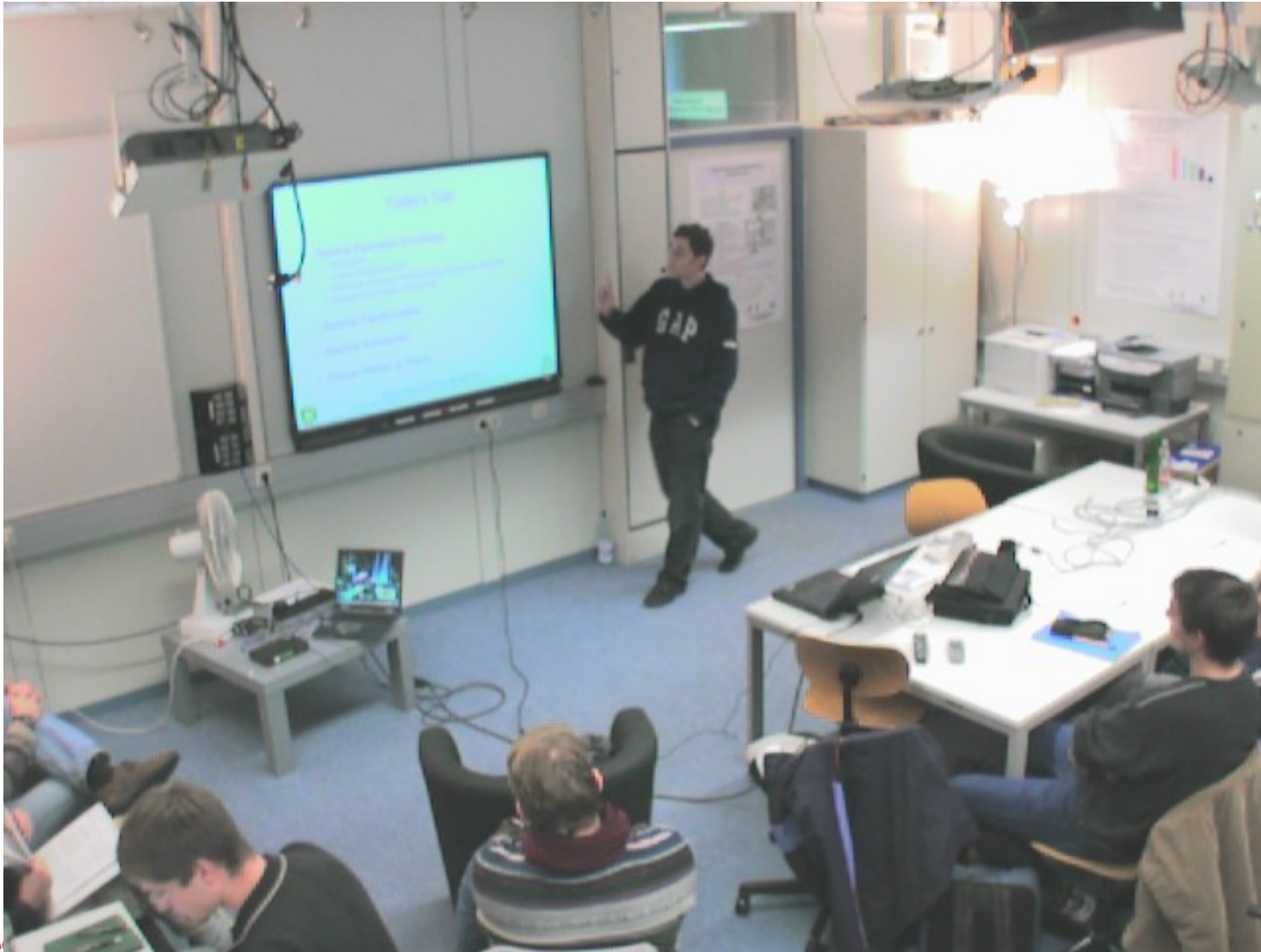
STANFORD UNIVERSITY
CarnegieMellon



Sensors in the CHIL Room

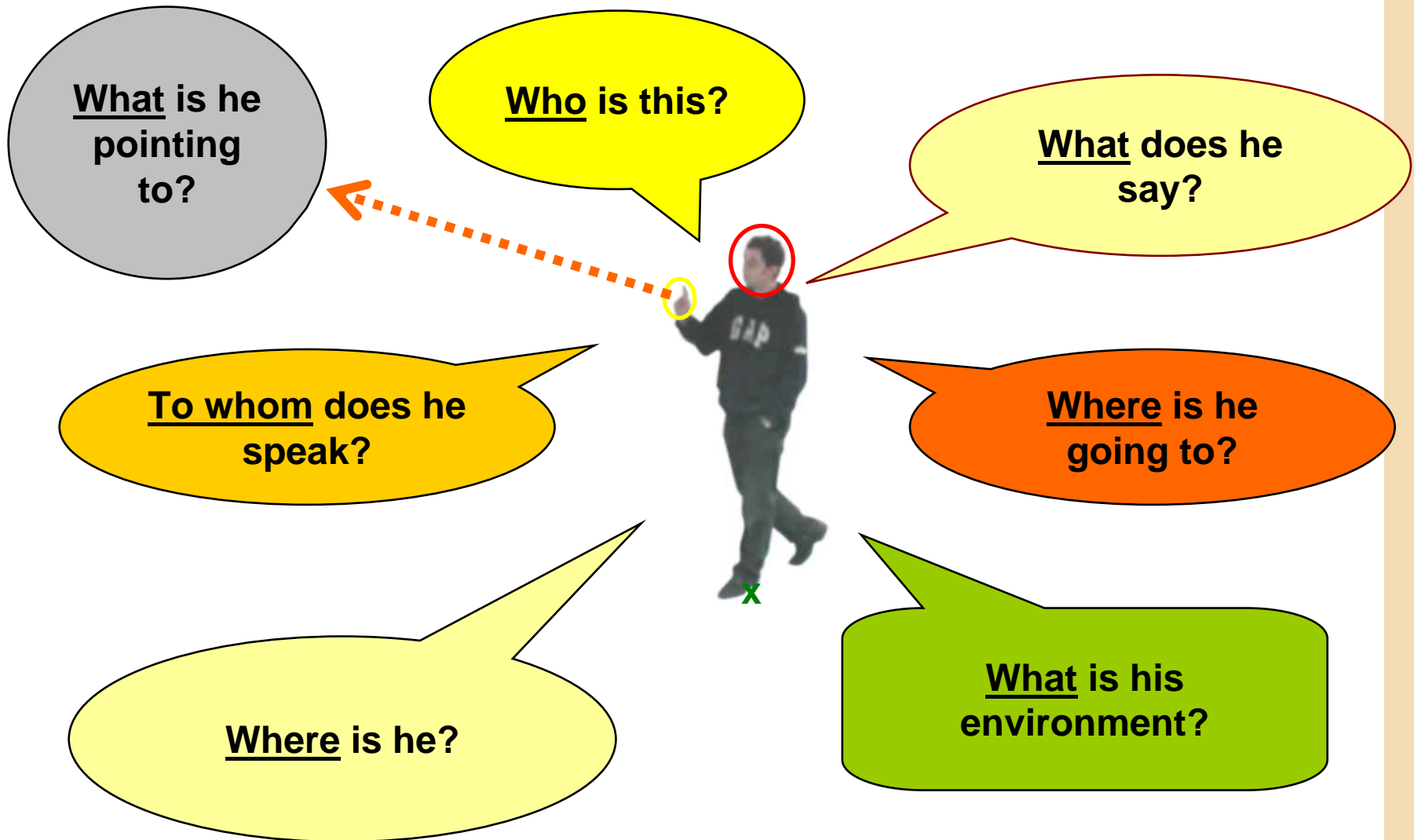


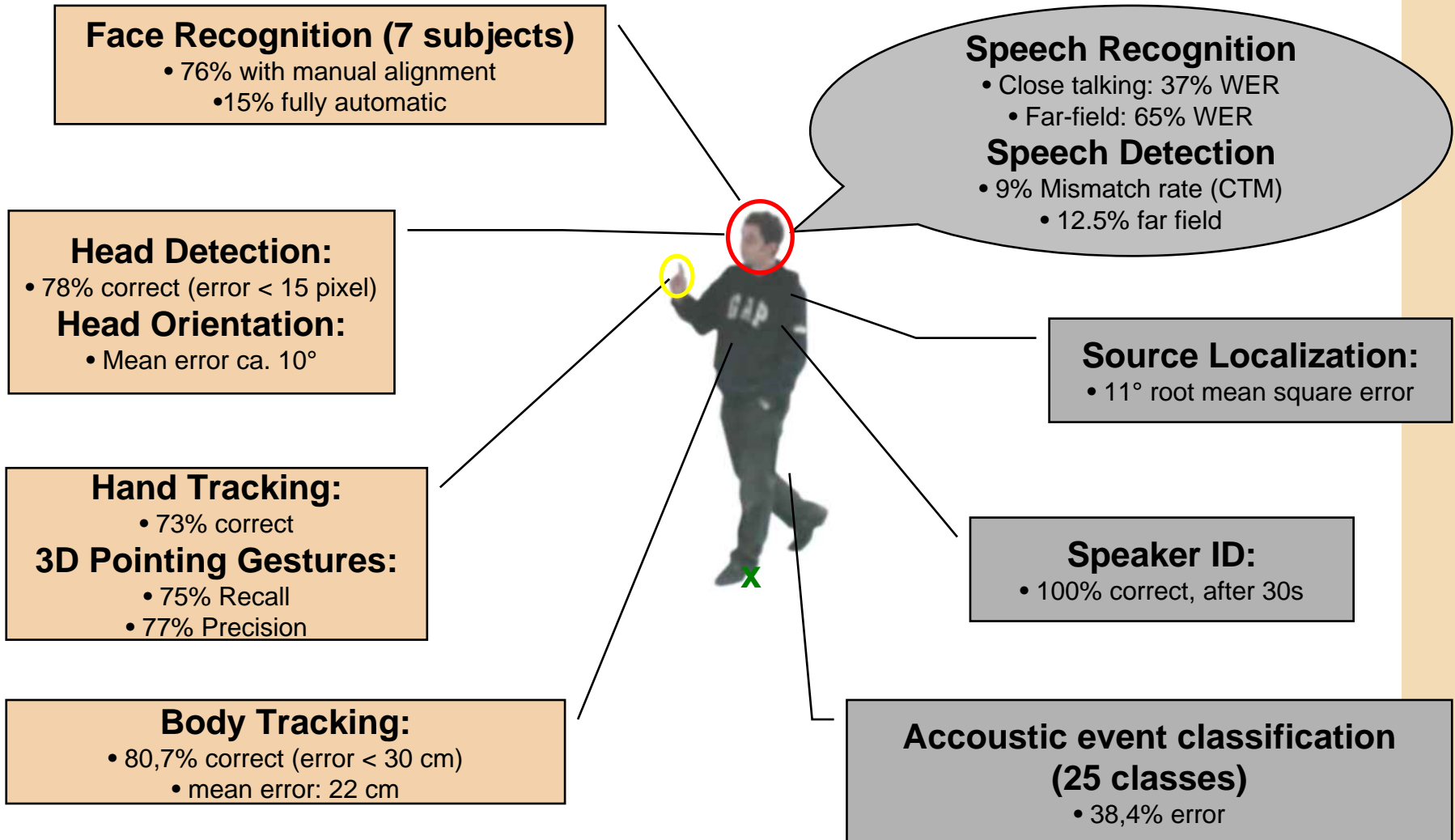
Describing Human Activities



Describing Human Activities







Phone Calls During Meetings



Memory Jog

....What was his name? ...Where did I meet him? ...What happened at the last meeting?



Memory Jog

....What was his name? ...Where did I meet him? ...What did we discuss last time?



....what is he saying?



你们的评估准则是什么

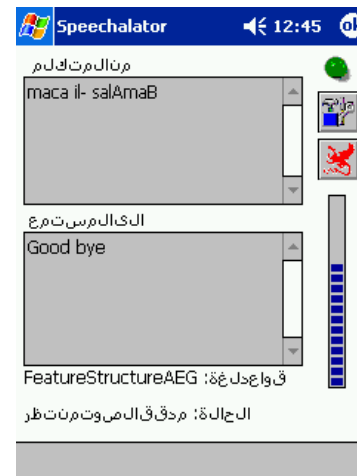
History:

- Domain Limited, Clear Speaking Style (late 80's-91)
 - Janus (first European&US speech-to-speech system)
 - ATT, NEC, ATR
- Domain Limited, Spontaneous ('91-'00)
 - Janus II/III (work on 20 languages),
Verbmobil, Nespole, Enthusiast,
C-STAR, ATR, ETRI, NLPR,...
- Fieldable, Domain Limited, Spontaneous (current)
 - Transtac, Babylon, Phraselator, Thailator,
- Domain-Independent Speech Translation (current)
 - TC-STAR, STR-DUST, GALE

Fieldable Systems:

PDA Speech Translators

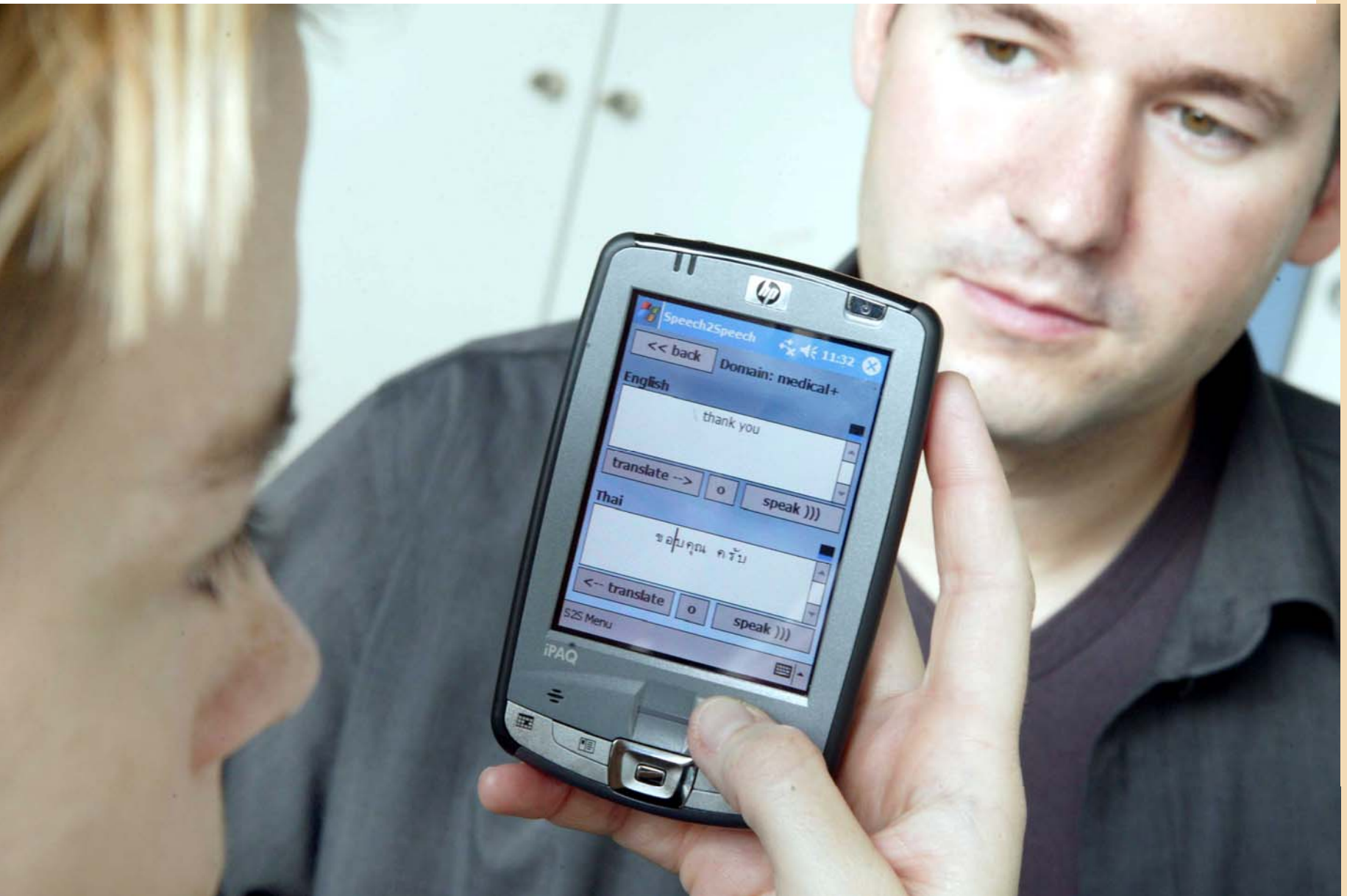
- Tourism
 - Conferences
 - Business
 - Olympics
- Humanitarian
 - Refugee Registration
 - First Responder
 - Healthcare
 - USA, Latino Population
 - Europe, Expansion
 - Third World
- Government
 - Peace Keeping, Police

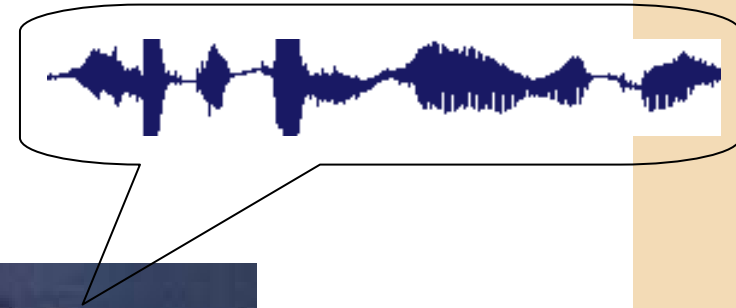




interACT

Pocket Interpreter (Mobile Technologies)







Pocket Translator of Foreign Signs

(Mobile Technologies, LLC Pittsburgh)

Problem 1: Domain Limitation cannot handle:

- TV/Radio Broadcast Translation
- Translation of Lectures and Speeches
- Parliamentary Speeches (UN, EU,...)
- Telephone Conversations
- Meeting Translation



你们的评估准则是什么



MR PRESIDENT

señor presidente



- Performance, Robustness
 - Spontaneous and Conversational Speech
 - Noise Channel, Environment, Distance from Mic, Stress/Emotion
 - Coverage, Named Entities, Plausibility
- Integration/Human Factors
 - Platform, Footprint, Comp. Requirements
 - Human Factors, Appropriate User Interface
 - Interaction H-H & H-M
- Domain, Scope, Coverage
 - Scope: Phraselator → Domain Limited Two-Way → Domain Unlimited
 - New Domains - Vocabularies, Grammars (Speech/NLP)
 - Interactive Tools for Adaptation in the Field
- Multilinguality, Portability
 - Problems: Morphology, Lexica, Scripts, Foreign Accents, Names
 - 6000 Languages:
 - Language Portability – Language Independence and Adaptation
 - Data Sparseness