

TRANSTAC

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Problem

- **Address the widespread operational need for translation support: the most critical impact is on soldiers and field operatives**
- **Develop technologies and systems that enable spontaneous two-way speech communications: must be robust under real world tactical use conditions**
- **Reduce time-to-solution for new languages and dialects – starting with Iraqi Arabic**

Background

- **Technical challenges**
 - Speech recognition and machine translation
 - Fast development with few resources
- **Current Status**
 - Limited one-way handhelds in the field
 - Two-way prototypes for 4 languages in FY 04/05
 - 6 developers for Iraqi Arabic in FY 05/06

Iraqi
Arabic
Speaker



“How many men did you see?”



“There were four men”



English
Speaker

Objective

- **Support development and evaluation of two-way speech-to-speech translation devices**
 - To address the needs of military users
 - To provide useful feedback for developers
- **Produce measures for benchmarking and Go/No-go decisions in quarterly evaluations**
 - Assess improvement over time
 - Compare different systems
 - Produce results quickly

Activities

- **Second quarterly evaluation, December 05**
 - Experimentation with methods, metrics
 - Offline components: recognition, translation
 - Live scenarios with Iraqi speakers
- **Third quarterly evaluation, March 06**
 - Development of new evaluation measures
 - Translation scoring tool
 - 6 developers with 9 platforms
- **Additional evaluations and field testing TBD**

Highlight



The screenshot shows the IraqComm application window. The title bar reads "IraqComm -- Iraqi-English Speech Translation System by SRI International". The menu bar includes "File", "View", "Actions", "Tools", and "Help". The main interface is divided into several sections:

- Text to translate:** Contains the Arabic text "اليوم الصبح بالجامع" and an "Edit Input" checkbox.
- Translation:** Displays the English translation "the day in the morning in the mosque".
- Language Selection:** Features radio buttons for "English" and "Iraqi Arabic", along with "Translate" and "Replay" buttons.
- Microphone Level:** Includes sliders for "English" and "Iraqi" audio levels.
- Abort:** A button to stop the current process.
- Recent Phrases:** A list of phrases such as "Instructions to Iraqi Arabic speaker" and "Wait to speak until you hear this (to a man)".
- Buttons:** "Please repeat" and "Do you understand?" buttons.
- Alternatives:** A table of speech alternatives with keys F1 through F7.
- Translation Alternatives:** A list of alternative English translations, including "today in the morning in the mosque".

The Windows taskbar at the bottom shows the Start button, the application name "IraqComm -- Iraqi-En...", the "SRI Process Manager" taskbar item, and the system tray with the time "6:14 AM".

SRI Speech-to-Speech Translation System

Impacts

- **Ability to converse in multiple languages; enhance situational awareness and safety of the warfighter in different environments**
- **Translation accuracy, robustness, language and domain portability, collection logistics, and training**
- **Innovative methods and measures to evaluate speech translation devices**
- **Put the most effective technology into the warfighter's hands as quickly as possible**

Future Plans

- Refine and evaluate metrics and methods of evaluation
- Faster development and test spirals
- Focus on rapid deployment of capabilities for new languages

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TransTac Evaluation Site

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Navigation

- [Home page](#)
- [My Settings](#)
- [Logoff](#)

News:

Don't forget... clicking on "Submit," none of your evaluations will be recorded.

next TransTac Notice there is a range of answers from "<<worst" to "best ->>".

eval is sooner For each output, select the circle at the far end of "worst" if it is than you think! either completely unintelligible or if it is completely unrelated to the spoken input. Likewise, select the far end of "best" if it is intelligible and has a reasonably complete correspondence with the spoken input.

Evaluation screen

Progress:

Summary Instructions

Please make sure you grade all the responses on the page, before you click "Submit." Once you submit your evaluations, there will be no backtracking. If you logoff (or go to the home page) before clicking on "Submit," none of your evaluations will be recorded. Notice there is a range of answers from "<<worst" to "best ->>". For each output, select the circle at the far end of "worst" if it is either completely unintelligible or if it is completely unrelated to the spoken input. Likewise, select the far end of "best" if it is intelligible and has a reasonably complete correspondence with the spoken input.

Spoken Input	Evaluated output	Score
who controls electricity ?	تصل كهرباء . الذي يتحكّم في الكهرباء اللي يتحكم الكهرباء منو يسيطر كهرباء الذي يسيطر على كهرباء	<<-worstbest->> ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ <<-worstbest->>
أنا إسمي ^أحمد ^علاوي	trunk my name is ahmed allawi i my name ahmed allawi I am my name Ahmed Allawi . my name is ahmed allawi my name is Ahmed Allawi	<<-worstbest->> ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ <<-worstbest->>
أني ^أحمد	i am ahmed i'm ahmed I am Ahmed . i am ahmad i'm ahmed	<<-worstbest->> ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ <<-worstbest->>