

ROSIDS - Rapid Open Source Intelligence Deployment System

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SpeechTEK | 2006
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open source intelligence IS

- intelligence gather by publicly accessible sources (TV, Radio, Newspapers, Internet...)
- 85% of used intelligence is open source intelligence
- OSINT is only a single digit % of the intelligence budget

Government - SAIL LABS Project

“A” Navy needed a reliable, robust, independent, maintenance free, real-time and inexpensive open source intelligence (OSINT) tool for Arabic TV and radio ...

➤ and they needed it fast.

1st Step: Needs Assessment

“Need”

- Close caption insert
- Time shift
- 60 seconds (10-20s speech engine*, 10s translation, 30s safety buffer)

“Have”

- SAIL LABS: reliable, real-time and robust ASR for Arabic
- Sakhr: fast, reliable Arabic translation engine

*=due to the nature of languages themselves, engine requires only 2s

Result

They said one of our competitors could deliver *in 30 days at very little cost!*

We said: „**Sorry**, but we don't want to disappoint a customer“

2nd Step: 1 year later (366 days exact)

The same Navy still needed a reliable, **working**, robust, independent, maintenance free, real-time and inexpensive open source intelligence (OSINT) tool for Arabic TV and radio ...

- fast (well, at least as quick as it works!)

Result

We decided to build and offer **ROSIDS**
(**R**apid **O**pen **S**ource **I**ntelligence **D**eployment **S**ystem)





A souvenir photo accompanied by clear بات

Building ROSIDS

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Building ROSIDS

Requires close work with

- Someone who knows **time shifting**
- Someone who knows **ASR**
- Someone who knows **translation technologies**
- Someone who knows **how to put this all together**

ROSIDS Arabic to English



Situational Awareness
International Crisis Management
Open Source Intelligence
Real-time Speech-to-Text (ASR)
Translation (MT)

Also to and from:

Arabic, English, French, German, Greek, Polish, Spanish, ...

Schematic Layout

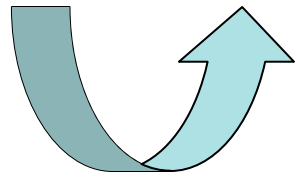


- ✓ Satellite
- ✓ TV Antenna
- ✓ Cable
- ✓ Radio



**Sail Labs
ROSIDS**

- Speech Recognition
- Text Translation



Real-time 30s latency



Store in archive

**Sail Labs
Media Mining**

Accuracy Hits

How do you make this thing readable?

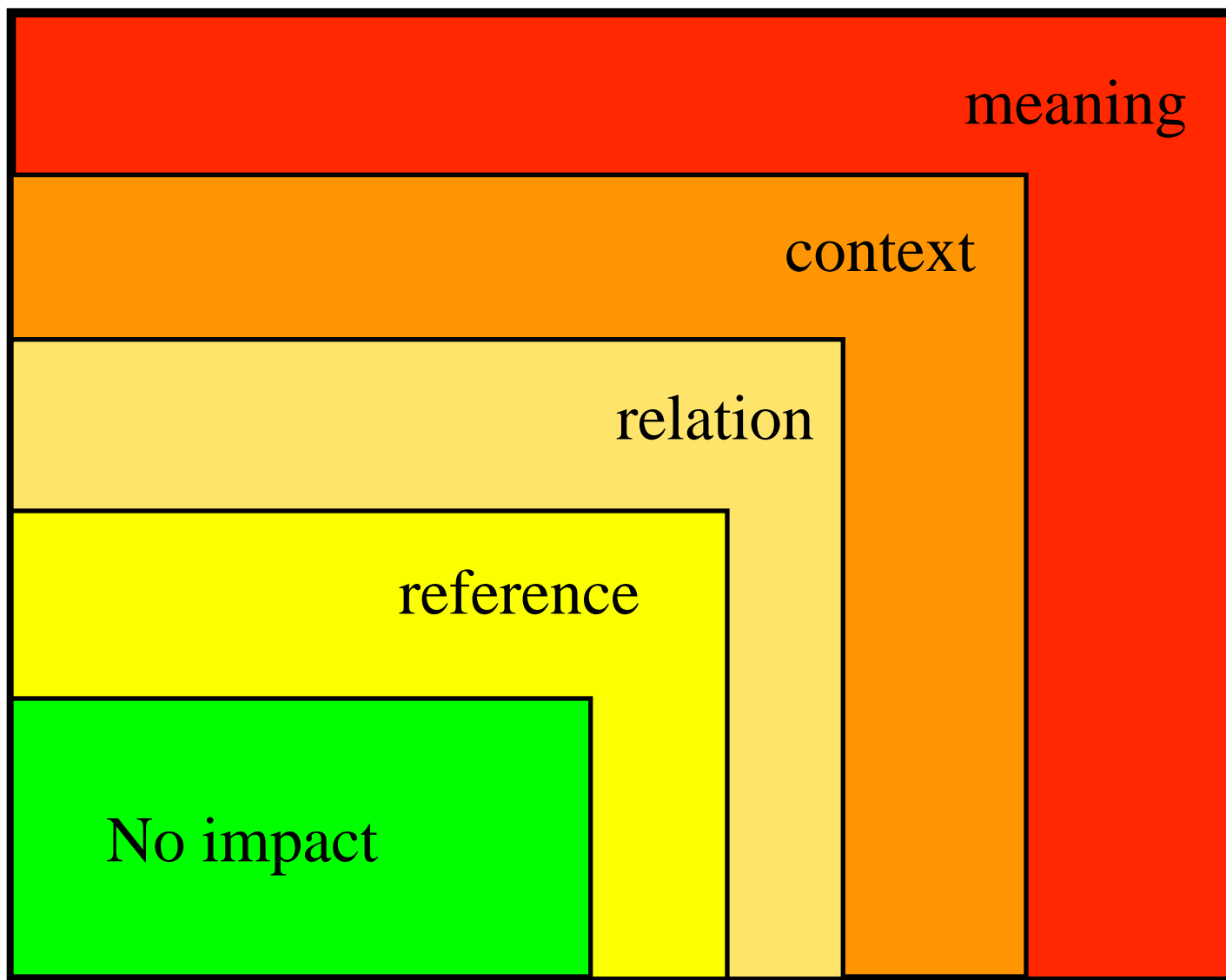
- **ASR WER is 5-25%** (depends on audio, domain, etc)
- **Translation error rate is 5-30%** (depends on source text)
- **Combined untreated error rate CAN GO ANYWHERE!**

- **Context is much more important than WER!**

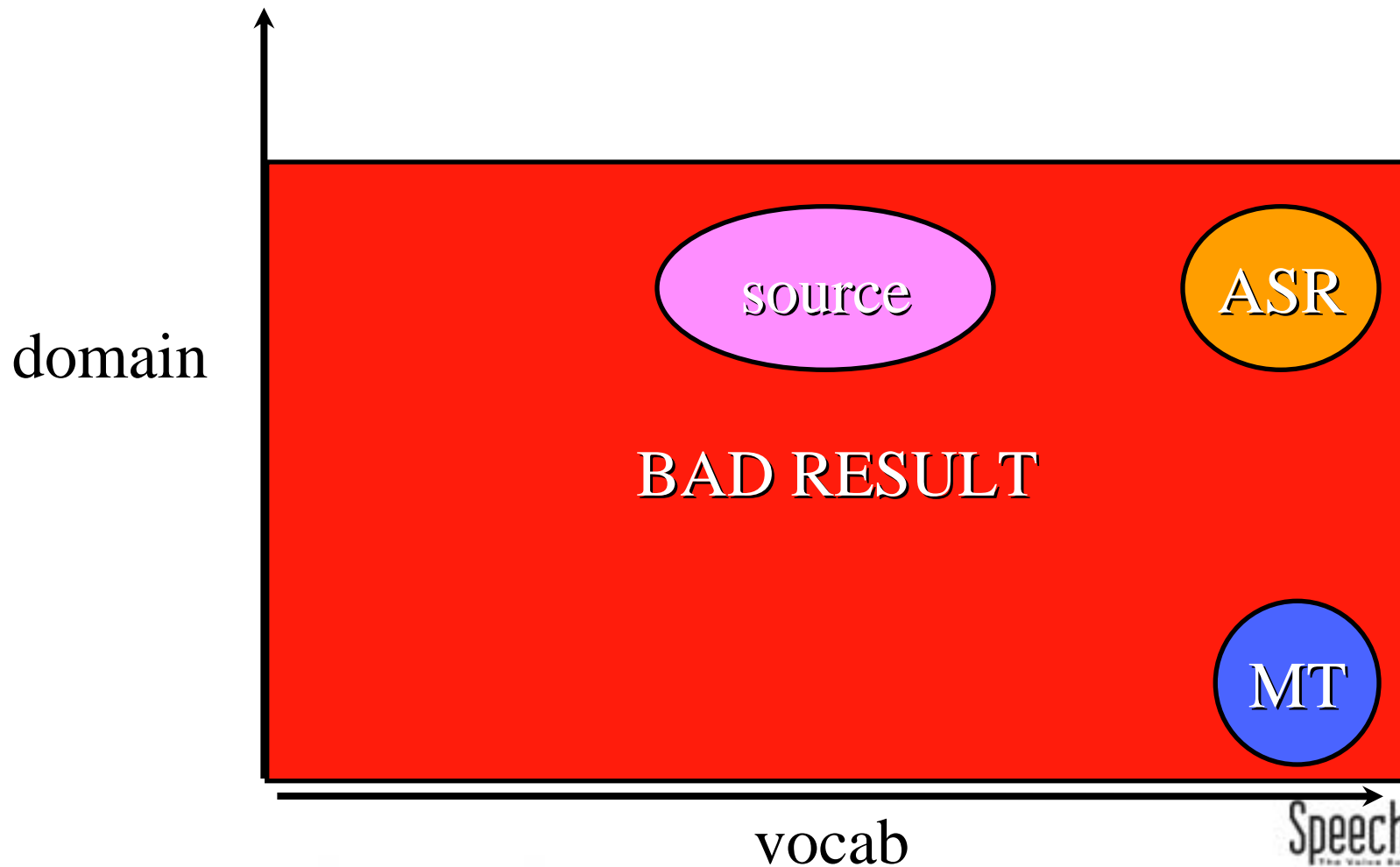
Machine Translation (MT)

- Traditional MT sources from Books
- MT + ASR, MT must assume non structured, non grammatical, no syntax
- New MT models where adapted to Broadcast news

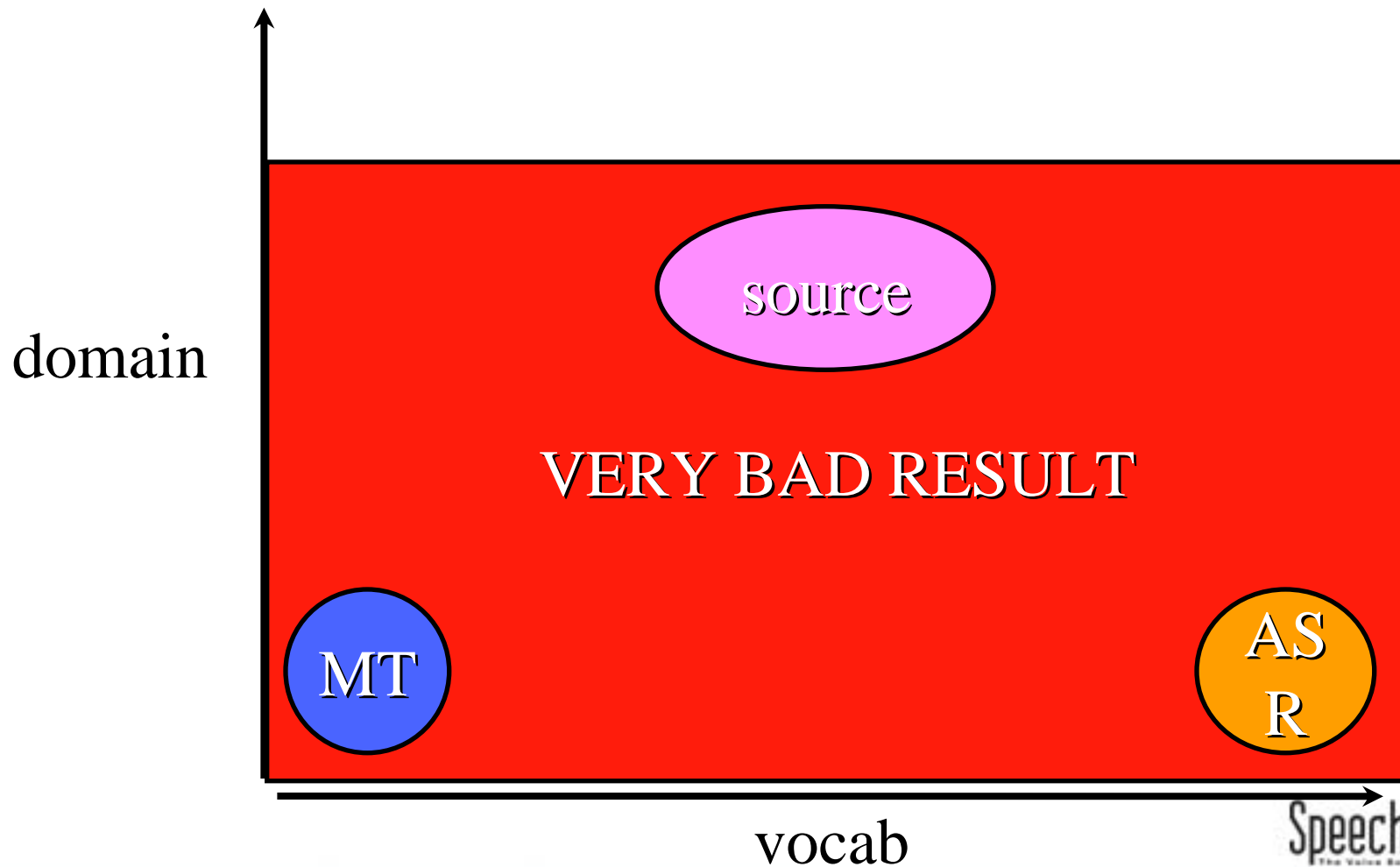
Impact of ASR and MT combined errors



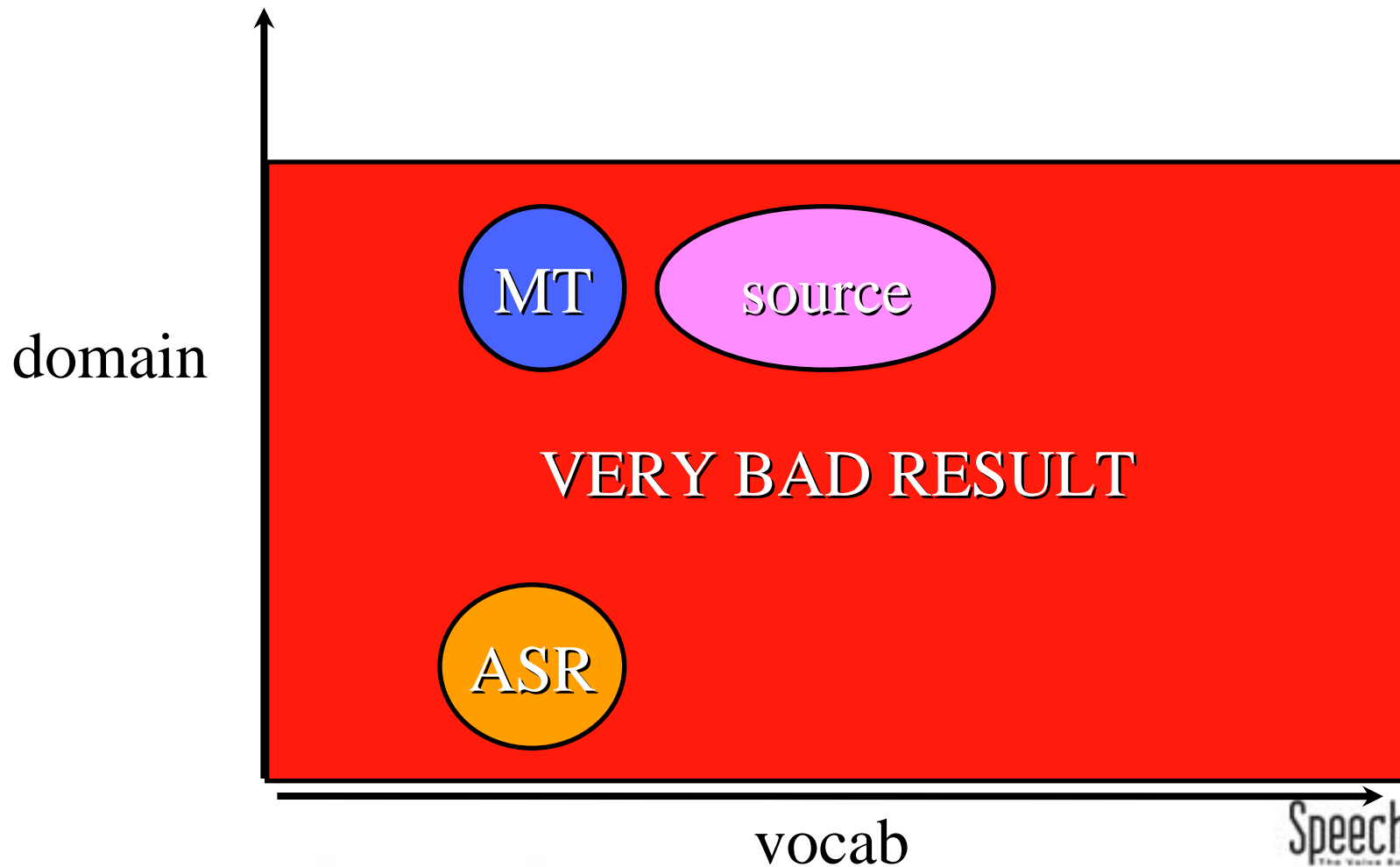
Remedies



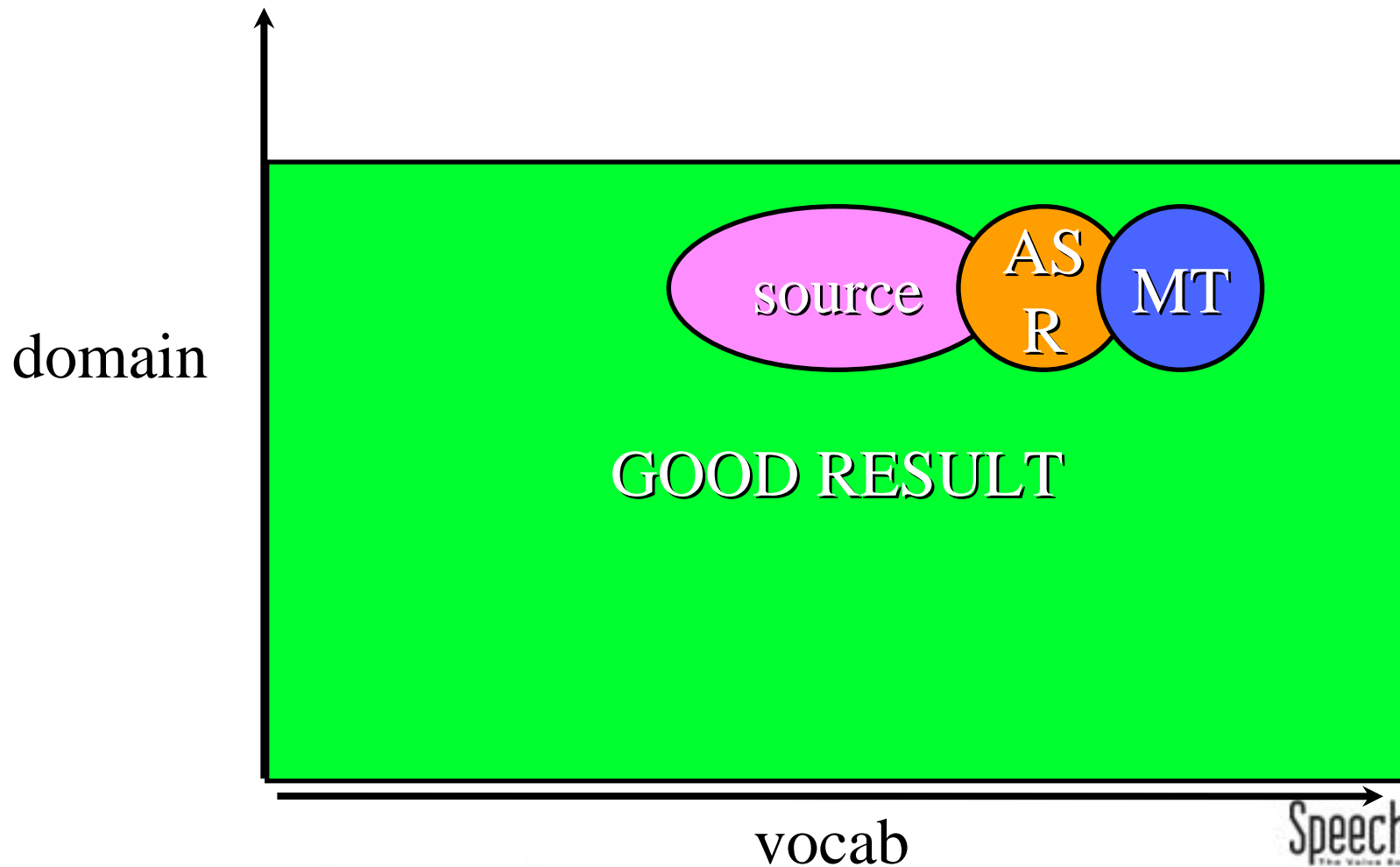
Remedies



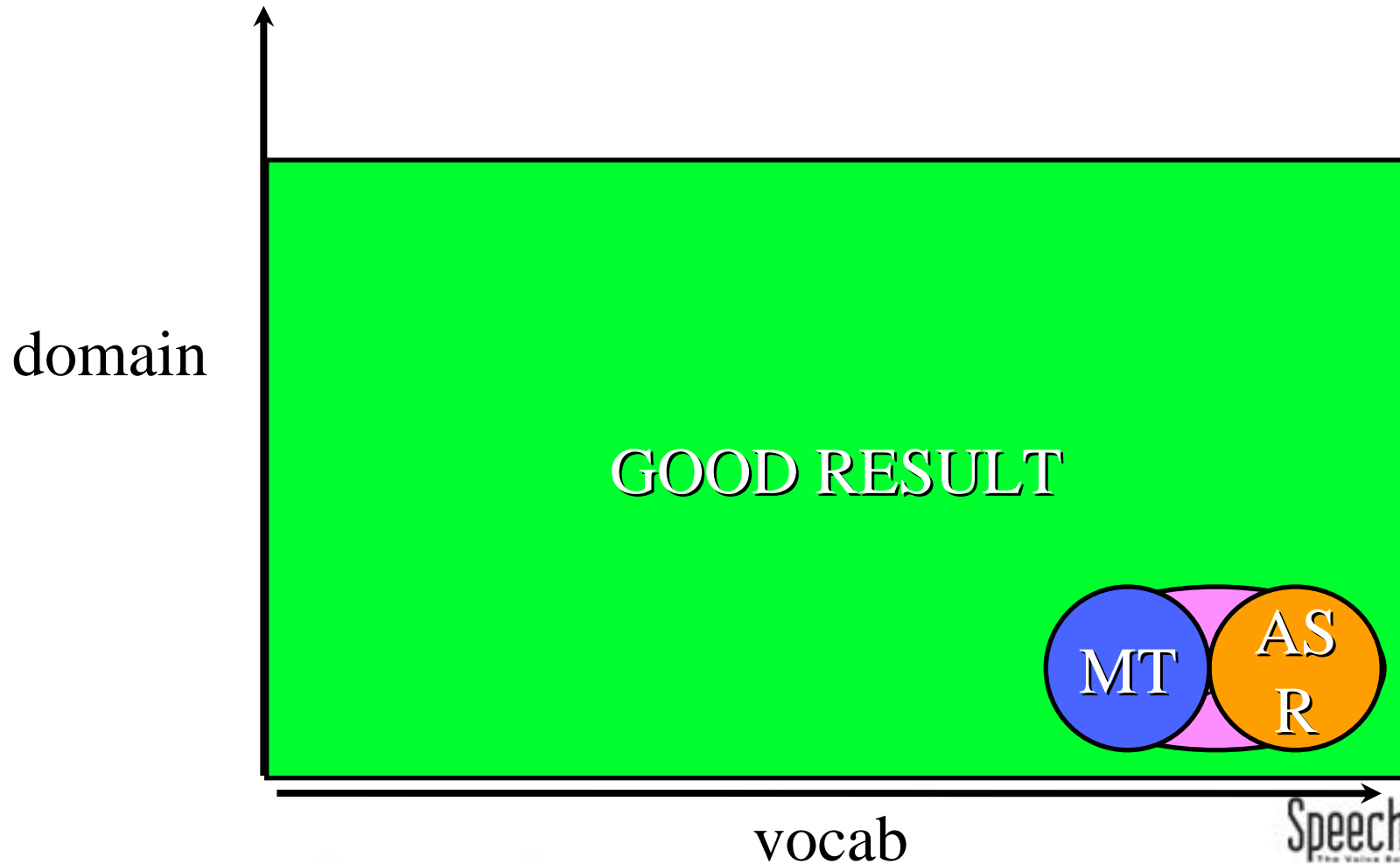
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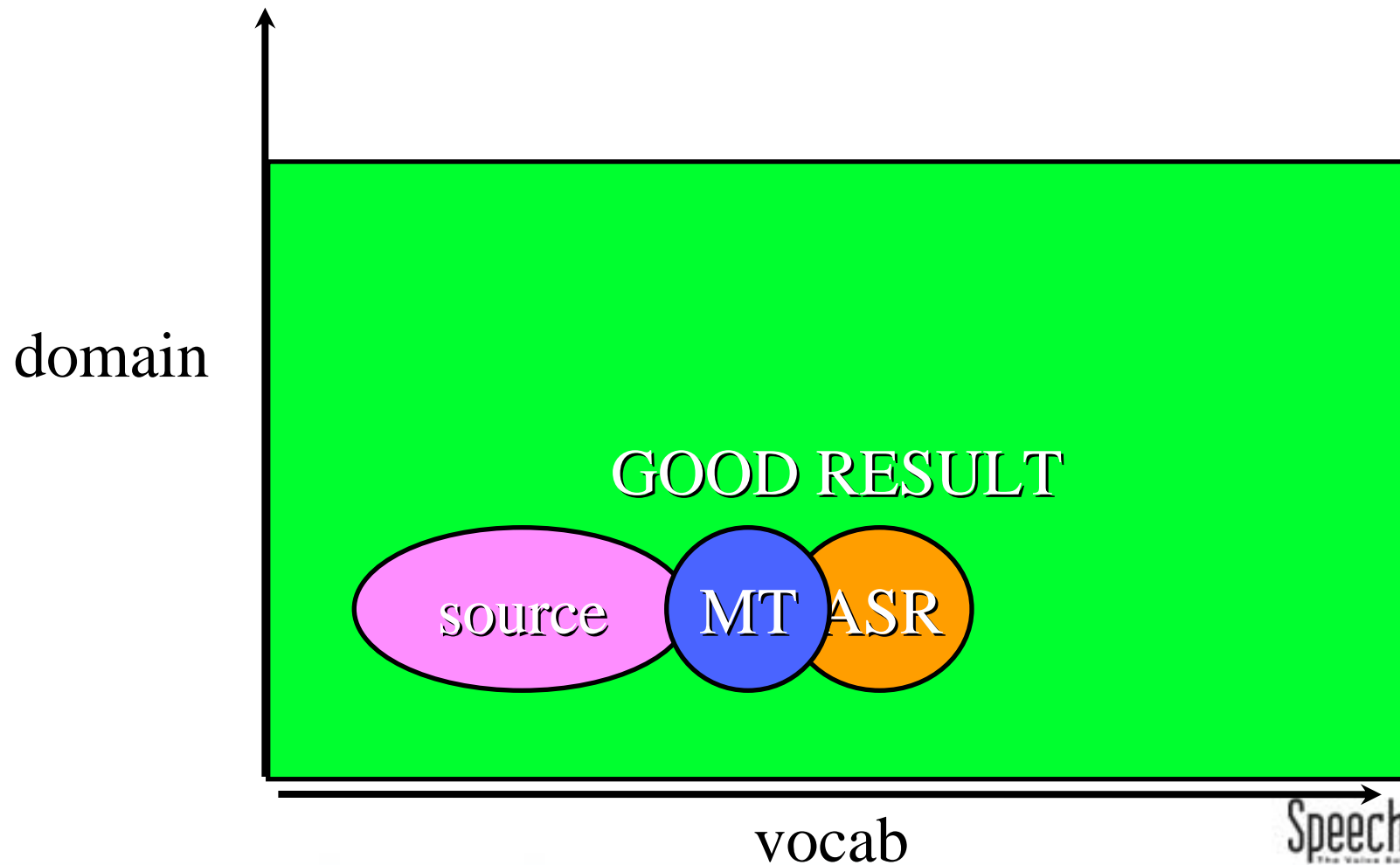
Remedies



Remedies



Remedies



Human vs Machine

It will always be necessary to get somebody who is familiar with the language and even better with the cultural environment to look at the relevant piece and decide what it means.

ROSIDS just helps a non-linguist decide when to get (wake) the analyst and when better let him sleep!

Empowering Your customers and employees with speech technologies

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Thank You

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