

Road Signs in Tunisia



Agenda

1. The Work
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8. In 2026

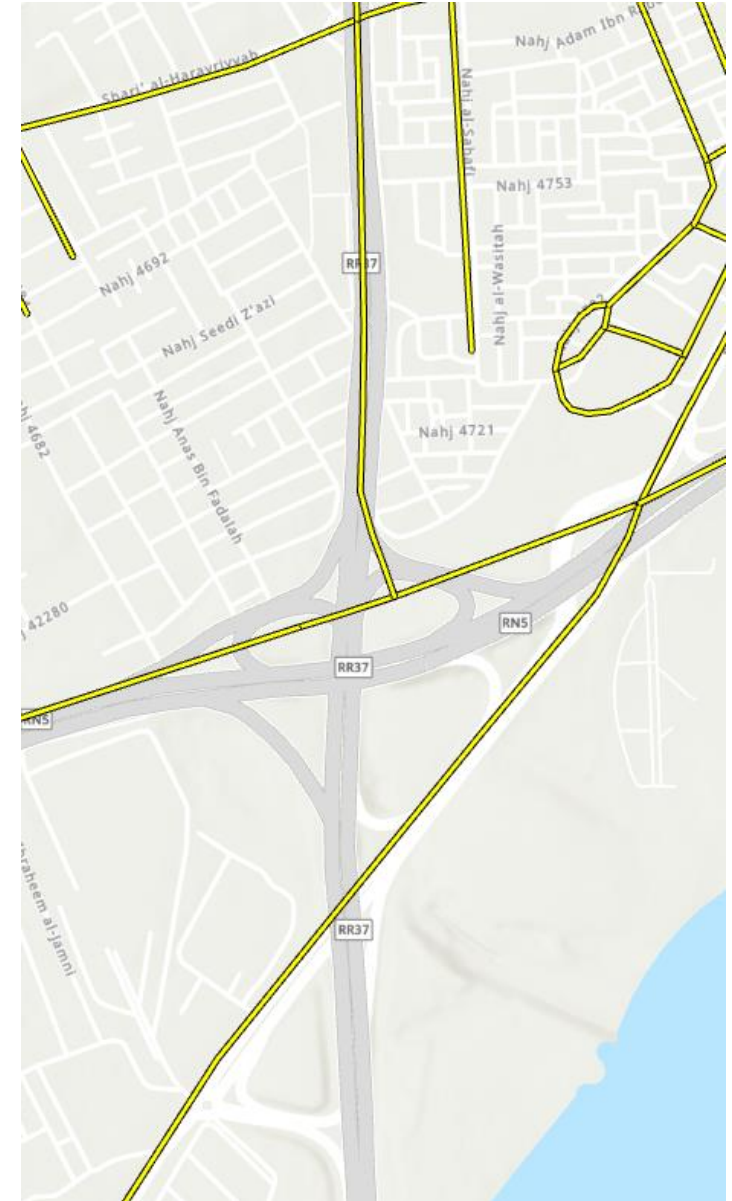
The Work

- Our Road Safety staff work around the World
- They need lots of data and spatial assistance
- Abley obtained a contract to support Tunisia's National Road Safety Program in 2025
- But did they have data?



Tunisia is not like New Zealand

- GIS data is hard to obtain
- Many dataset we have, don't exist in Tunisia
- We have grown expectations about what complete data looks like.
- Often free-sources (OSM, etc) don't contain enough information



This Presentation

We required speed limit on the roads so that we could perform a range of calculation

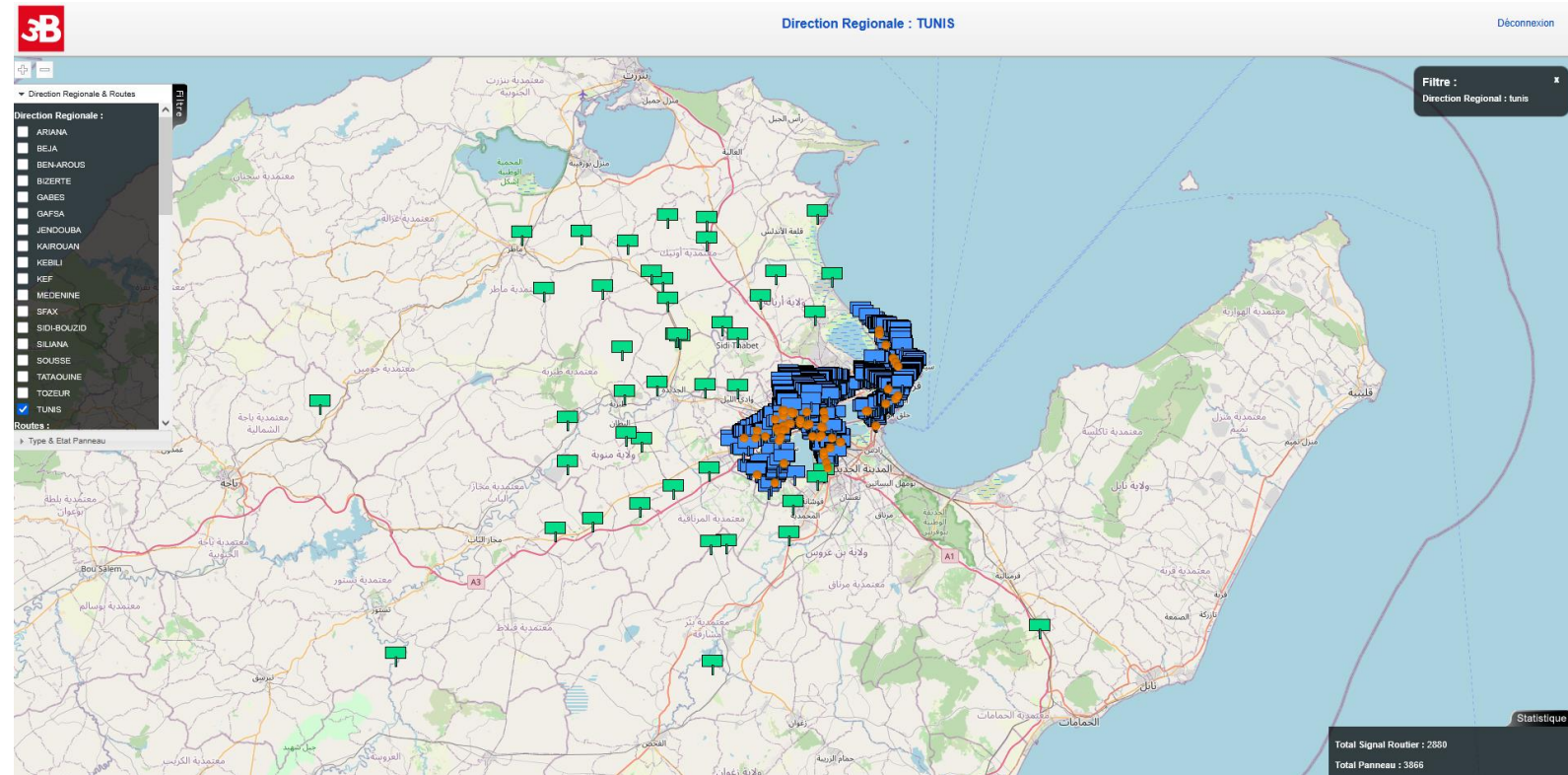
- Just focused on Obtaining Speed Information:

- Scraping a custom web application
- Using Vision AI to extract Speed Information

This is from mid 2025

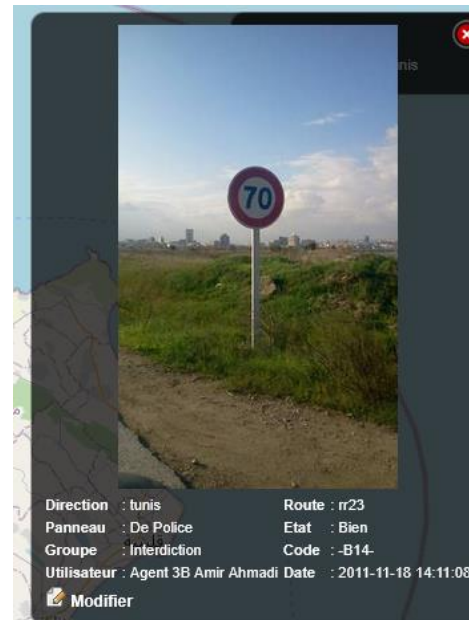
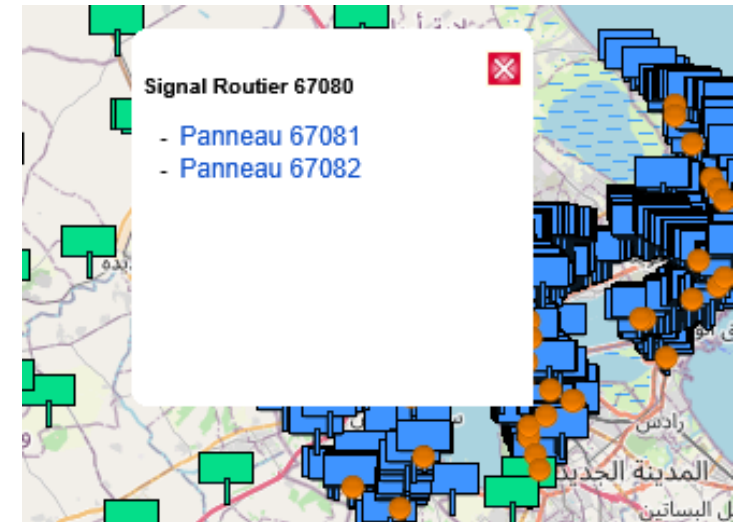
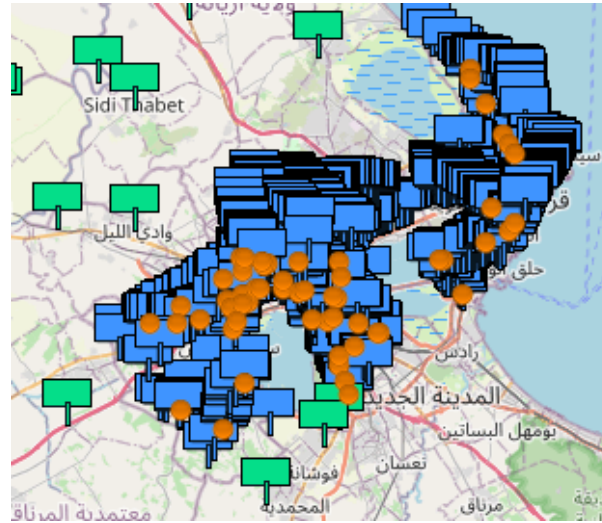
Getting Data: Speed Sign Information

- Tunisia Road Data had no Speed limits
- They did have a database of Sign Imagery
- They suggested that was the quickest way of getting some data we needed
- Custom Website: Cookie based



Getting Data

- Requires Login
- Sign Locations are shown
- A popup then shows associated sign(s)
- Clicking through in the popup shows sign details (B14 and B30)
- An image is then available



Getting Data: FME to the rescue

- Login and flow: Cookie Capability
- Impersonate a browser and refresh cookies, to get through security
- Json Extraction
- HTML Extraction (CSS Extraction for links)
- HTML Table Extraction
- Image Fetching

▼ HTTP Client Options

HTTP Version*	Use HTTP/2 if possible
Save Cookies*	Yes

Transformer Name: HTTPCaller_7

Request

Request URL:

HTTP Method:

☐ Use Authentication

▶ Query String Parameters

▼ Headers

Name	Value
☐ Referer	http://87.98.129.40/login/
☐ Origin	http://87.98.129.40
☐ Host	87.98.129.40
☐ User-Agent	Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:141.0) Gecko/20100101 Firefox/...
☐ Priority	u=0, i

Extract Queries

Target Attribute*	CSS Selector*	Tag Part/HTML Attribute*
☐ links	☐ a[onclick]	☐ onclick

This Result from Fetching

It took several hours to get around security and develop a process to extract and record all locations for the Speed Signs

- Downloaded over 5000 speed signs from a total 30,000 + Signs

**But all we really have
is an image and location!**

- Now we need to get the defined speed. Chris had tested an idea to use Vision AI.

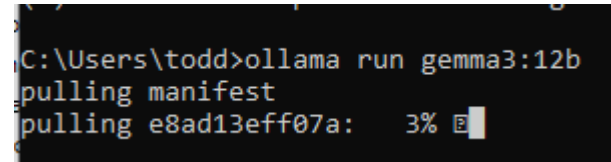
AI in our business (in early-mid 2025)

- As a business, we were understanding the risk/reward that AI offered
- Most of our clients didn't have their own AI policies
- But we had no issues using Open Models on our own infrastructure
- Ollama had free and open Vision AI



Ollama: If you have not used it

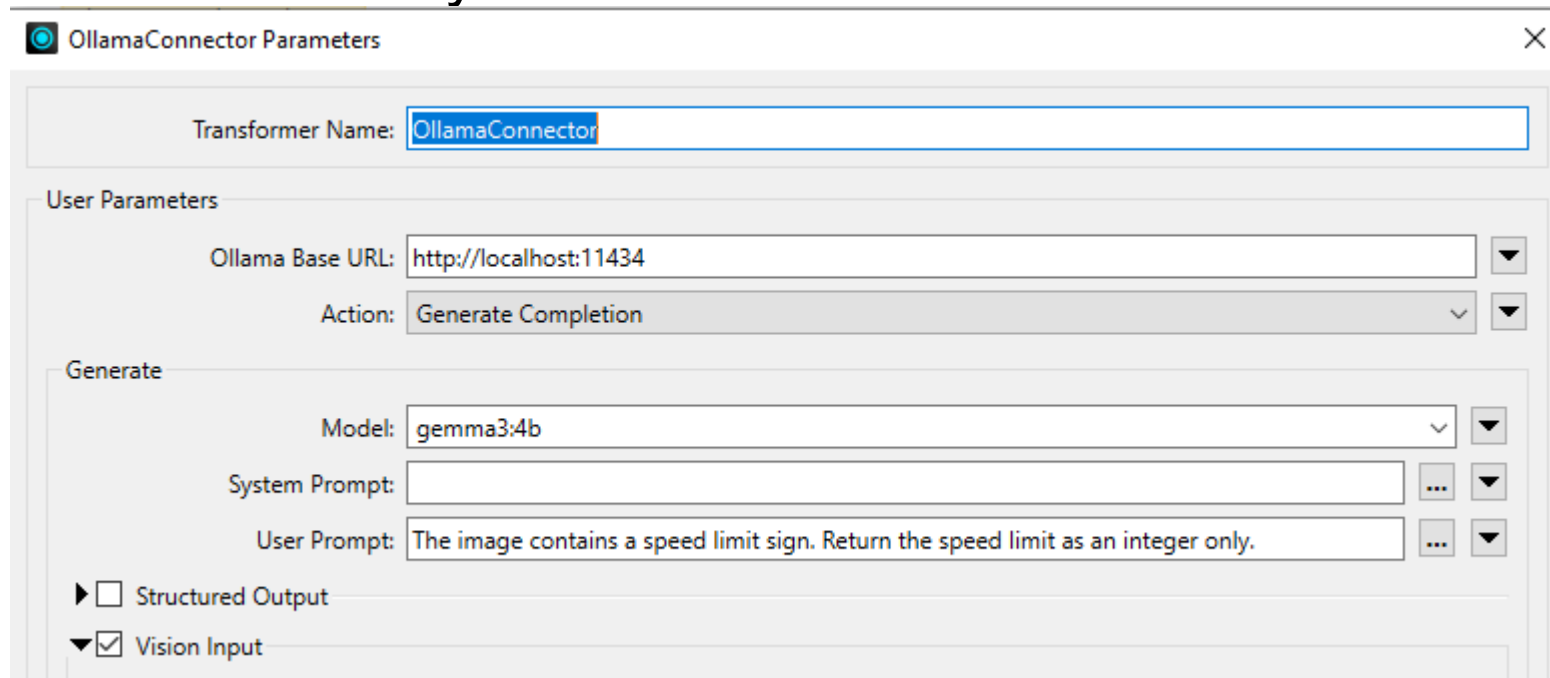
- Download Ollama from ollama.com
- Run Gemma4:e4b “ollama run gemma:e4b”
- Or maybe Gwen 3.5 “ollama run gwen3.5:4b”
- There are so many free models, but the complexity varies significantly

A terminal window showing the command 'ollama run gemma3:12b' being executed. The output shows 'pulling manifest' and 'pulling e8ad13eff07a: 3%' with a progress bar.

```
C:\Users\todd>ollama run gemma3:12b
pulling manifest
pulling e8ad13eff07a: 3% [ ]
```

FME OllamaConnector

- Create yourself, or use out of the box
- FME comes with connectors to lots of AI, and one being Ollama
- We can run many different models



The screenshot shows the 'OllamaConnector Parameters' dialog box in FME. The 'Transformer Name' field is set to 'OllamaConnector'. Under the 'User Parameters' section, the 'Ollama Base URL' is 'http://localhost:11434' and the 'Action' is 'Generate Completion'. In the 'Generate' section, the 'Model' is 'gemma3:4b', the 'System Prompt' is empty, and the 'User Prompt' is 'The image contains a speed limit sign. Return the speed limit as an integer only.' At the bottom, the 'Structured Output' checkbox is unchecked, and the 'Vision Input' checkbox is checked.

OllamaConnector Parameters

Transformer Name: OllamaConnector

User Parameters

Ollama Base URL: http://localhost:11434

Action: Generate Completion

Generate

Model: gemma3:4b

System Prompt:

User Prompt: The image contains a speed limit sign. Return the speed limit as an integer only.

☐ Structured Output

☒ Vision Input

So what do results look like...



30



70

But its not always right



68

But its not always right



65

But its not always right



5



60

But don't ask it about its confidence

- *“The image contains a speed limit sign. Return the speed limit as an integer only. Please return the confidence between 1 to 100, with 100 being full confidence of the speed limit.”*
- Bigger models 12B, 27B, 120B potentially improve results, but definitely consume more resources and time.
- 4 seconds per image, 5000 images = 6 hours
- 60 seconds per image, = 4 days

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Confidence: 100

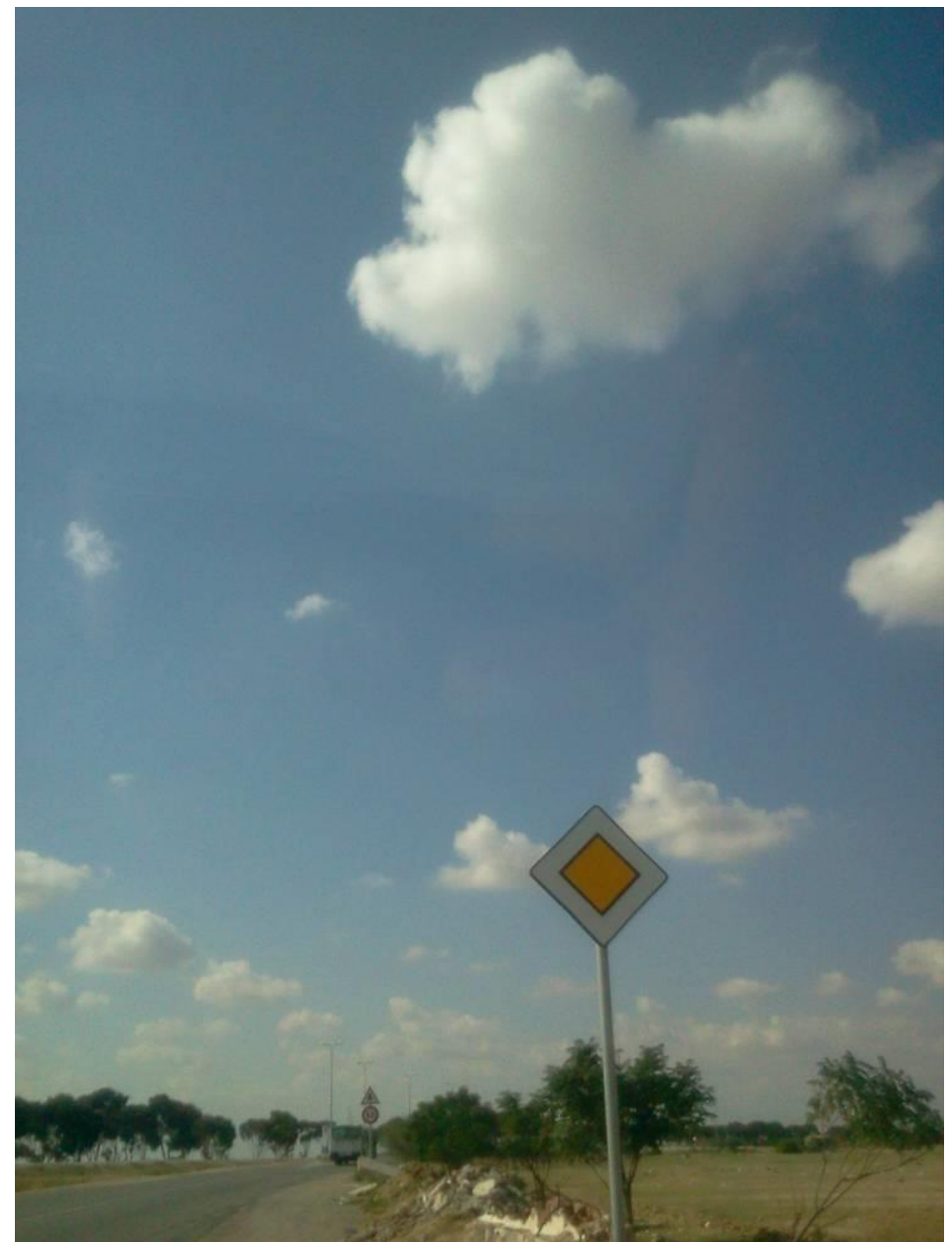
Strategies

- Use a basic query to start with:
- *“The image contains a speed limit sign. Return the speed limit as an integer only.”*
- Then follow up with a query with more details. Do you get the same result?
- Follow up queries are basically free

45

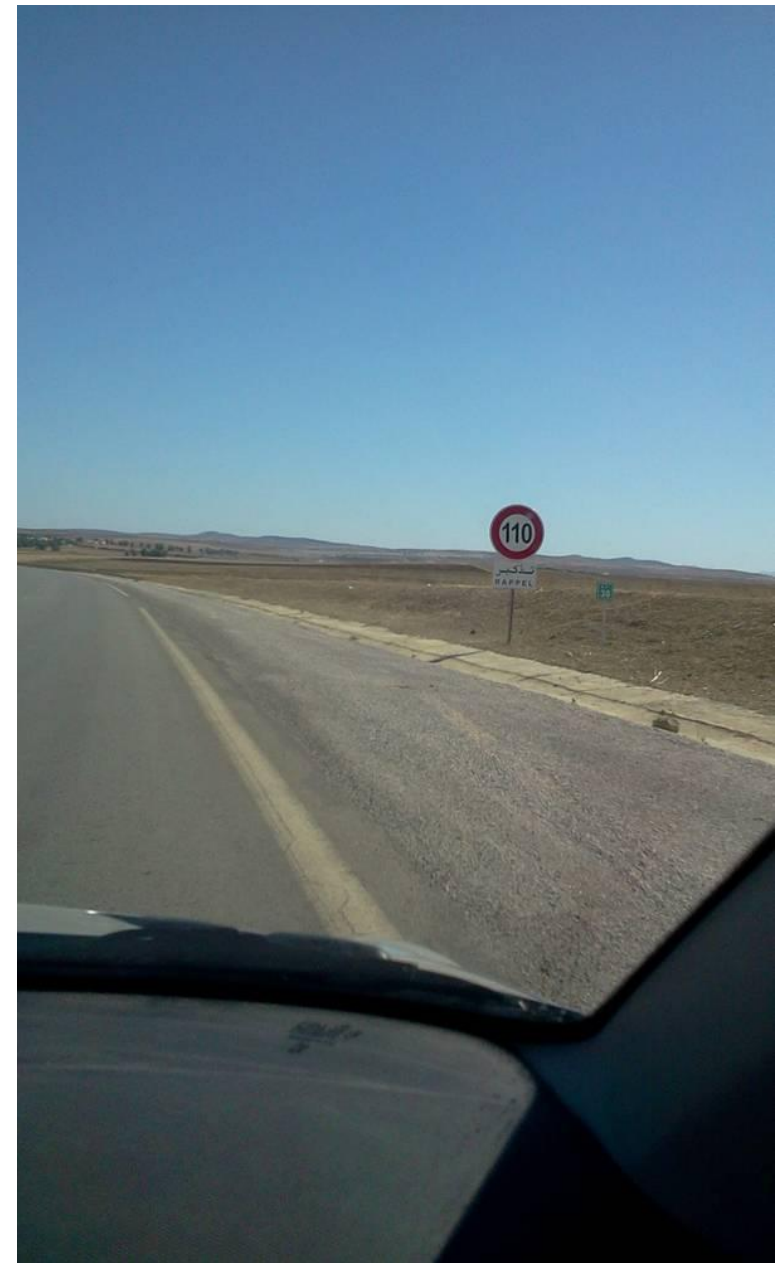
5

01



Strategies

- Still inconsistent?
- Don't try and provide a simple model with too much context....
- Move to a bigger, smarter model. But only when you have difficult images.



Results

- Estimated 90% + accuracy.
- Plenty of images we could not decipher (AI and our eyes).
- Quickly gave us data we could work with.



Okay, considering your excellent point about potential graffiti and the possibility of a zero at the end, I'm revising my answer.

I believe the most likely speed limit in this image is 0.

Confidence: 85 – acknowledging the uncertainty due to the potential for obscured markings.

But we were not finished

- Chris Tredinnick needed to figure out which ways the signs were actually pointing (not recorded in GPS).
- And he had to assign the speed limits to the road.
- Ask him about it!

Do you manage FME Flow?

- We are looking for a few additional beta tester for:
- **FME Flow Reporting and Audit**
- Over 100 outputs including:
 - Who's email is in use
 - Where are connections used
 - Are any Apps broken
 - Duplicated connection settings
 - Plus things you won't even know are risks

**Come and see me to find out more,
or email todd@abley.com**

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