





## Knowledge is power

- Accurate place names are critical in intelligence
- In the field
  - “Well, the place sounded like ‘Moosayib’...”
  - Where’s that?



Here!

Gizi Map of Iraq - GeoScope by Basis Technology

File Edit Calibration View Help

Zoom 69% Detail... Go->

Latitude: 32°47' N Longitude: 44°17' E

المسيب Al Musayyib

Select Features

Fuzzy Search

Moosayib Search Clear Detail Names

Ortho match  Phono match  Limit to View

Hawr al-Musayhib	هور المصيحب	MRSH	31°05' N	46°48' E
Ibrahim Nasib	إبراهيم نسيب	PPL	34°14' N	45°14' E
Masayif (al-)	المصايف	RSRT	36°45' N	43°35' E
Mashru' al-Musayb al-Kabir	مشروع المسيب الكبير	AREA	32°45' N	44°26' E
Mizban	مزيبان	PPL	31°29' N	47°16' E
Musayyib (al-)	المسيب	PPL	32°47' N	44°17' E
Nasif Jasim	نصيف جاسم	PPL	33°30' N	43°05' E
Nusf Shatt al-Gharbi	نصف شط الغربي	AREA	31°34' N	47°20' E
Nusf Shatt al-Sharqi	نصف شط الشرقي	WTLDI	31°27' N	47°28' E
Qada' al-Musayyib	قضاء المسيب	ADM2	32°47' N	44°19' E
Rujm al-Munayshif	رجم المنيشيف	HLLS	31°03' N	43°17' E
Sulayman Nazif	سليمان نظيف	PPL	33°33' N	44°10' E
Tall Musayhib	تل مسيحب	PPLW	31°04' N	46°50' E

Latitude 32°09' N Longitude 43°19' E 385 LA 4128 5874 Gazetteer Calibrated NUM



## Knowledge is power - in the linguist's cubicle

- “Translate this list of 1,000 locations to the IC standard”
- No problem!

	A	B
1	Places in Iraq	
2	الأبلة	=bttranslate(A2,"ic")
3	الحلة	



	A	B
1	Places in Iraq	
2	الأبلة	al-Ubullah
3	الحلة	Fill down
4	الدجيلة	



	A	B
1	Places in Iraq	
2	الأبلة	al-Ubullah
3	الحلة	al-Hillah
4	الدجيل	al-Dujayl
5	الديوانية	al-Diwaniyyah
6	بصرة	Basrah
7	بعقوبة	Ba'qubah
8	بغداد	Baghdad
9	بغديده	[Bghdydh]
10	تكريت	Tikrit
11	تلعفر	Talafar
12	صفوان	Safwan
13	خانقين	Khaniqayn
14	زبير	Zubayr
15	عفك	['Fk]

Spot-check inexact matches and you're done!



## A happy marriage

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- GeoName data + linguistic technology
- Equals the ability to:
  - Fuzzily match and locate places in a Middle Eastern map viewer
  - Convert Arabic place names ↔ Roman script
  - Standardize “approximate” Romanized Arabic to a transliteration standard



## Outline

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- How the data + technology works
- Demonstration
  - GeoScope Map Viewer
  - Transliteration Assistant
- Data and software challenges
- Future directions



## The raw data - National Geospatial-Intelligence Agency

Unique feature ID	Unique name ID	Lat. (DMS)	Long. (DMS)	Joint Operations Graphic	Feature classification	Designation (DSG)	Name type (NT)	Full name	Modified date
-290200	-443274	235700	325200	NF36-02	S	DAM	V	Al Sadd al Aali	12/8/1993
-290200	-443275	235700	325200	NF36-02	S	DAM	V	El Saad-el Aali	12/8/1993
-288174	-443276	312300	254500	NH35-02	H	RSVT	D	Bîr A`am	12/8/1993
-291054	-443277	251300	303300	NG36-09	H	SPNG	V	`Aîn el Aarab	12/8/1993
-291543	-443278	312900	264500	NH35-02	H	ANCH	V	Marsa Aasi	12/8/1993
416597	528667	292407	320019	NH36-10	T	PASS	N	Naqb al `Abā	12/9/1998
-288176	-443281	283500	304900	NH36-13	S	RSTN	V	Abā al Waqf	12/8/1993
-288177	-443280	283500	304700	NH36-13	S	RSTN	V	Abā al Waqf	12/8/1993
-288175	-443279	283515	304603	NH36-13	P	PPL	N	Abā al Waqf	8/21/2001



## Adding the technology

- Download NGA data
- Create a gazetteer
  - Basis' value add: reverse transliterate BGN transliteration to Arabic script
- In Basis' Arabic Desktop Suite:
  - Matches user's vague name input to NGA data entries.
  - Via Basis' Rosette name technology algorithm matches names

```
<entity> <id>-969728</id> <type>GPE</type>
  <associated_data><![CDATA[<location
latitude="32°34'00" N" longitude="35°41'00"
E"/>]]></associated_data>
  <appdata>
    <jog>NI36-16</jog>
    <dsg>HLL</dsg>
    <fc>T</fc>
  </appdata>
  <names>
    <name primary="true" lang="ar"
script="160"> <id>N-1439281</id>
    <data>تَلَّ أَبُو الْحُصَيْنِ</data>
    <transliterations><transliteration
scheme="BGN">Tall Abū al
Huṣayn</transliteration></transliterations>
    <appdata>
      <modifydate>1993-12-23</modifydate>
    </appdata>
  </name>
</names>
</entity>
```



## Demonstration

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- From the Basis Arabic Desktop Suite:
  - Transliteration Assistant
  - GeoScope Map Viewer



## Data & software challenges

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- Countries with mixed languages
- Some English mixed into “N” (native name) types (expect Arabic transliterations only)
- Currently limited to Arabic reverse transliteration only



## Filtering data

Unique feature ID	Unique name ID	Lat. (DMS)	Long. (DMS)	Joint Operations	Graphic	Feature classification	Designation (DSG)	Name type (NT)	Full name	Modified date
-290200	-443274	235700	325200	NF36-02	S	DAM	V		Al Sadd al Aali	12/8/1993
-290200	-443275	235700	325200	NF36-02	S	DAM	V		El Saad-el Aali	12/8/1993
-288174	-443276	312300	254500	NH35-02	H	RSVT	D	Bîr A`am		12/8/1993
-291054	-443277	251300	303300	NG36-09	H	SPNG	V	`Aîn el Aarab		12/8/1993
-291543	-443278	312900	264500	NH35-02	H	ANCH	V		Marsa Aasi	12/8/1993
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-288177	-443280	283500	304700	NH36-13	S	RSTN	V		Abā al Waqf	12/8/1993
-288175	-443279	283515	304603	NH36-13	P	PPL	N		Abā al Waqf	8/21/2001



## Future directions

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- Extend language coverage
  - For Afghanistan - e.g., Pashto, Dari
  - For Iran - Persian
  - For Pakistan - Urdu
  - For Korea - Korean
- Use the “Language” column in NGA’s data
  - Not yet fully populated by NGA



Thank you!

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Questions?

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