



# Quality Assurance with RTI Mobile FS (Field Surveys)

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# What is RTI Mobile FS?\*



- CAPI Mobile data collection platform
- Case management
  - Record of calls
  - Configurable eventing
  - Local database storage
- Survey engine
  - Back office survey authoring tool
  - Complex data capture logic & sequences
  - Simple ACASI, Real-time sampling
  - Computer Audio Recorded Interview (CARI)
- Captures info from sensors: GPS, photo, video, etc.
- Real-time encryption
- Wireless or wired transmission of data
- Integrates with RTI's centralized infrastructure for survey management

*\*Several slides are derived from IFDTC 2014 (Loftis & Keating)*

# What is RTI Mobile FS?



- Native Android & HTML5 (PhoneGap)
- Used for 400,000+ interviews, 35 countries, 40 languages so far



XX10001-00  
509 WARD ST  
TARBORO, NC 27432

Result 109 Nobody Home

Comments  
No car in the driveway.

Date 10/23/2013

Time 04:32 PM

Call Record

XX10001-00  
509 WARD ST  
TARBORO, NC 27432

Result 109 Nobody Home

Comments  
No car in the driveway.

Date 10/23/2013

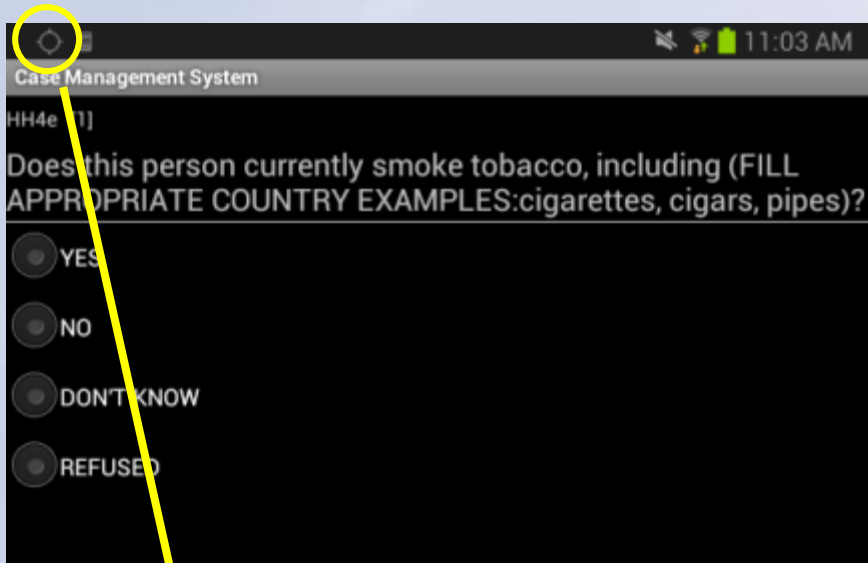
Time 04:32 PM

Update Cancel

1 2 3 4 5 6 7 8 9 0  
q w e r t y u i o p  
a s d f g h j k l  
↑ z x c v b n m , ! . ? ↑  
SYM English(US)

# GPS Capture

- Actively / passively captures interview location
- Can force the interviewer to turn GPS on before starting an interview
- GPS coordinates can be accurate to within 4 meters (~12')
- Wi-Fi or GSM enabled devices augment geolocation information
- GSM is critical for international sites

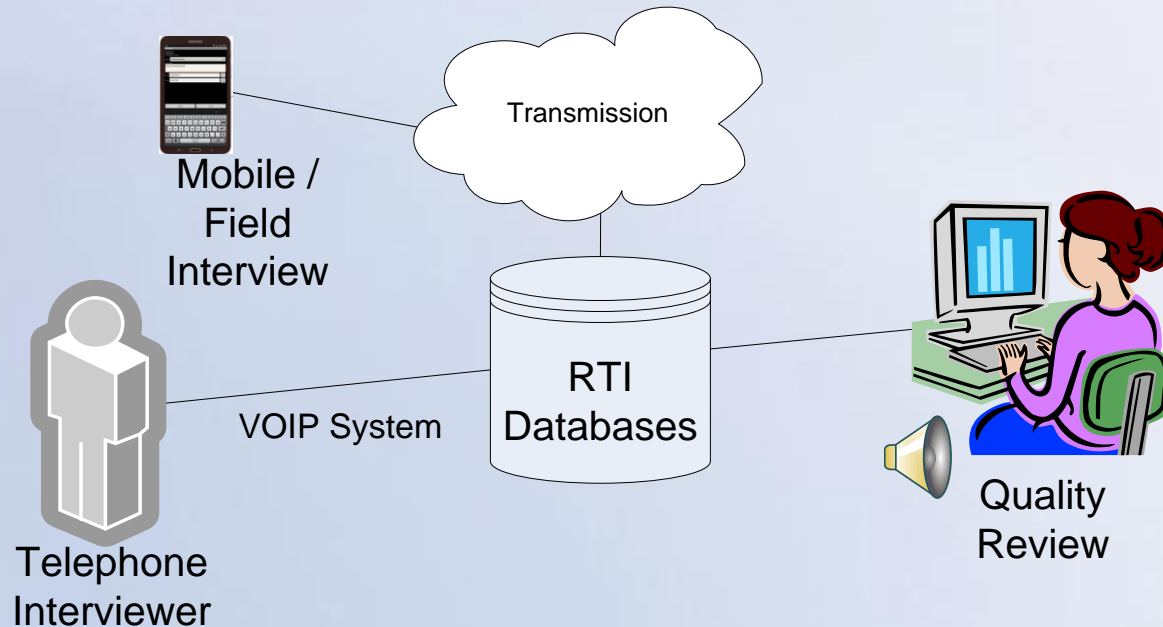


# CARI

- **Computer Audio-Recorded Interviewing (CARI)**
  - RTI Mobile FS passively records portions of survey interviews, allowing managers to assess the authenticity and quality of a field interview.
  - Flexible implementation: single question, multiple question, set timeframes.
  - Audio files transmitted along with response data

# QUality Evaluation SysTem (QUEST)

- Review & rate audio recorded during data collection
- Supports CATI, CAPI and mobile projects
- CARI audio, **GPS/Geo-fence verification, geo-tagged photos**

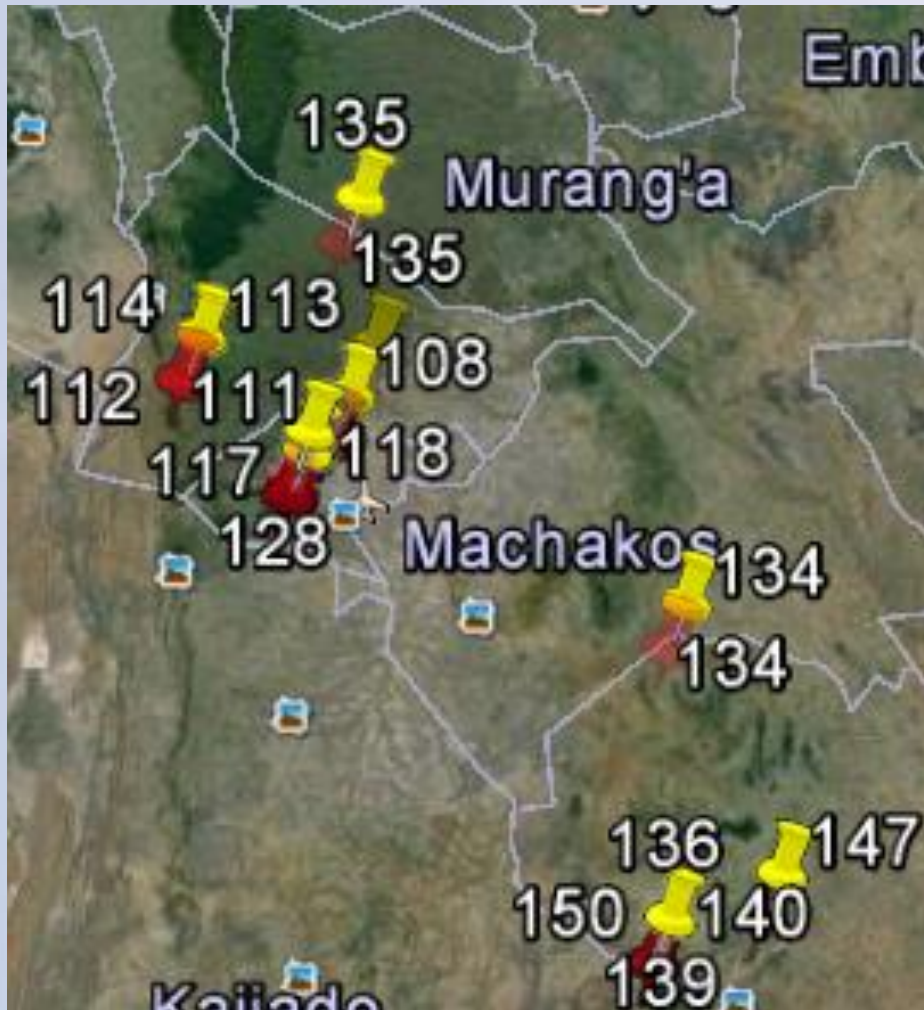


## CARI Files

Country Code	Files received	Files Reviewed
110	10289	872
121	28042	2675
122	35984	1271
123	24395	2144
124	42483	416
130	16184	298
140	21828	794
150	18725	90
160	16746	135
170	22544	2106
<b>Total</b>	<b>237220</b>	<b>10801</b>

- Collected CARI files at various points in the screener and interview
- Some brands/models were better than others
- Administered in somewhat noisy places
- Swipes are too fast for some devices

## Screener and Interview GPS



- Captured the GPS within the screener and interview
- Computed screener to interview distance



# Too Far? May be Cause for Concern



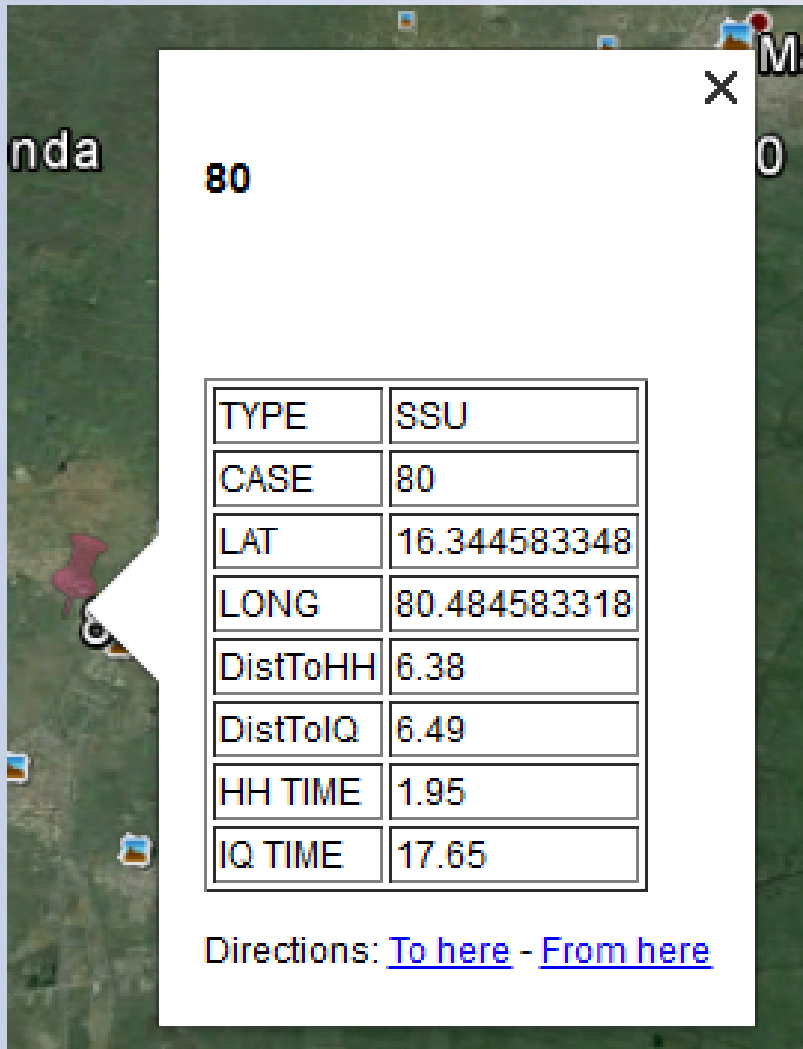
Screener to Interview Distance (miles)	Frequency	Percent
0	25176	98.9
10	140	0.55
20	46	0.18
30	62	0.24
40+	31	0.12

## Center of SSU and Screening GPS



- Computed the distance between the center of the Survey Sampling Unit (SSU) and screening GPS
- Identified cases which were too far off
- If concerned, looked at time durations and listened to CARI files

## Center of SSU and Screening GPS



80

TYPE	SSU
CASE	80
LAT	16.344583348
LONG	80.484583318
DistToHH	6.38
DistToIQ	6.49
HH TIME	1.95
IQ TIME	17.65

Directions: [To here](#) - [From here](#)

- Looking at one of the cases in detail
- Looked at the timing data for those cases
- Selected the CARI files for those cases for review

## Quality and Authenticity Checks

Screeners to Interview Distance (miles)	Screeners Length (mins)	Interview Length (mins)
111.15	1.58	14.1
103.84	2.1	26.1
74.53	2.68	15.55
74.5	5	24.32
55.62	3.57	32.37
50.98	4.33	30.75
44.35	3.55	12.53

- Computed the distance between screening and interviewing GPS
- Identified cases which were too far off
- Looked at the timing data for those cases
- Selected CARI files for those cases for closer review

## False Positives?

FIID	Screener to Sample Center	Interview to Sample Center	Screener to Interview	Screener Duration	Interview Duration
26	115.14	0.02	115.14	4.22	11.95
26	115.02	0.05	115.07	3.35	8.07
15	74.49	0.05	74.54	6.93	17.85
15	74.49	0.02	74.5	5	24.32
02	58.64	31.33	62.01	6.48	12.78

- Early review looked suspicious; duration and CARI indicated that they were authentic
- Further review confirmed that there was no falsification; user had reviewed the data in the head office

## In Conclusion

- Use GPS data to identify potential falsification
- Use interview lengths and CARI to confirm suspicions
- Add the following to the CARI review selection criteria
  - Distance between the screening and interviewing GPS
  - Distance between the screening GPS and center of sampling area

## Acknowledgements

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Thank you! Comments or questions?

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