

# Development of an Integrated CARI Interactive Data Access System for the US Census Bureau

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# Development of the CARI Interactive Data Access System

- CARI Interactive Data Access System overview
- Coding workflow
- Data flow
- System integration

# Census Bureau Context

- Implemented CARI\* using Blaise 4.8.2
- Want to do behavior coding using CARI files for the ACS Content Test, starting early 2011
- CATI and CAPI sources
- System must be integrated with current Census Bureau infrastructure for data loading and authentication
- Quality assurance coding sometime in future

\* *Computer Audio Recorded Interviewing*

# CARI Interactive Data Access System Overview

## Web-based CARI data access system

- Behavior coding
- Quality assurance coding
- Online training
- Automated assessment tool for user feedback
- Tools for integration with Census Bureau infrastructure
- *Coaching Component (2010 – 2012)*

# Workflow for Behavior & QA Coding

- Create new survey entry and user accounts
- Configure and assign staff to the survey
- Load data into the system
- Assign cases to sites and coders
- Conduct coding
- Monitor coding progress
- Data extraction and close-out

# User Roles

- System roles
  - System Administrator
  - Security Administrator
  - Site Administrator
- Survey roles
  - Research Manager
  - Headquarters Staff
  - Supervisor
  - Coder

# Web Pages by Roles

## Research Manager and HQ Role

### Supervisor Role

#### Coder Role

- Login
- Select Survey
- Coding Workload
- Case Coding
  - Media Player
  - Image Viewing
  - Notes

- Assign Staff To Survey
- View Staff Workload
- Assign Cases To Staff
- Restart Cases
- Reports

- Survey Configuration
- Assign Cases To Sites
- Review Recordings
- Query Data
- Extract Data
- Set Sampling Rates
- Manage Case Sampling

# Coding Workflow

- **System Administrators**
  - Create new surveys & user accounts
  - Load survey data
  - Close out
- **Research Managers**
  - Configure behavior and QA codes
  - Assign cases to sites
  - Monitor progress
- **Supervisors**
  - Assign cases to coders
  - Monitor progress
- **Coders**
  - Coding cases

# Behavior Coding Page

**CARI**  
Interactive Data Access

User: coder001      Component: Behavior Coding  
Role: Coder      Survey: RTI Test 50

Log Out      Work Load

**Cases** → [CNTR1037] ✓ Sample Quest... ✓ Sample Quest... ✓ Sample Quest... Sample Quest... Sample Quest... [CNTR1038] [CNTR1039] [CNTR1040]

**Blaise Instrument Questions** → [CNTR1037] ✓ Sample Quest... ✓ Sample Quest... ✓ Sample Quest... Sample Quest... Sample Quest...

**Case Data** →

Survey ID:	RTI_0050	Survey Name:	RTI Test 50
Control Num:	CNTR1037	Question:	Sample Question
Coding Status:	In Progress	Date/Time Last Saved:	08/31/2010 01:48:51 PM
Assigned Coder ID:	coder001	Assigned Coder Role:	Coder
Audio Link:		Audio Date/Time:	04/28/2008 12:47:39 PM
Image Link:		Image Date/Time:	04/28/2008 12:47:39 PM
Data Collection Mode:	0	Interviewer ID:	intv001

Reason For Not Coding: [dropdown]

**Behavior Codes** →

Categories	Respondent Behavior	Language
Interviewer	R-AA Adequate Answer <input checked="" type="checkbox"/>	L-E English <input checked="" type="checkbox"/>
Respondent	R-CL Clarification <input type="checkbox"/>	L-M Mixture of English and Spanish <input type="checkbox"/>
Final	R-DK Don't Know <input type="checkbox"/>	L-PI Pronunciation problems for Intv <input type="checkbox"/>
	R-IA Inadequate Answer <input type="checkbox"/>	L-PR Pronunciation problems for Resp <input type="checkbox"/>
	R-IU Inaudible/Uncodable <input type="checkbox"/>	L-S Spanish <input type="checkbox"/>
	R-R Refuse <input type="checkbox"/>	
	R-UA Uncertain Answer <input type="checkbox"/>	

**Selected Codes** → Codes: R-AA L-E

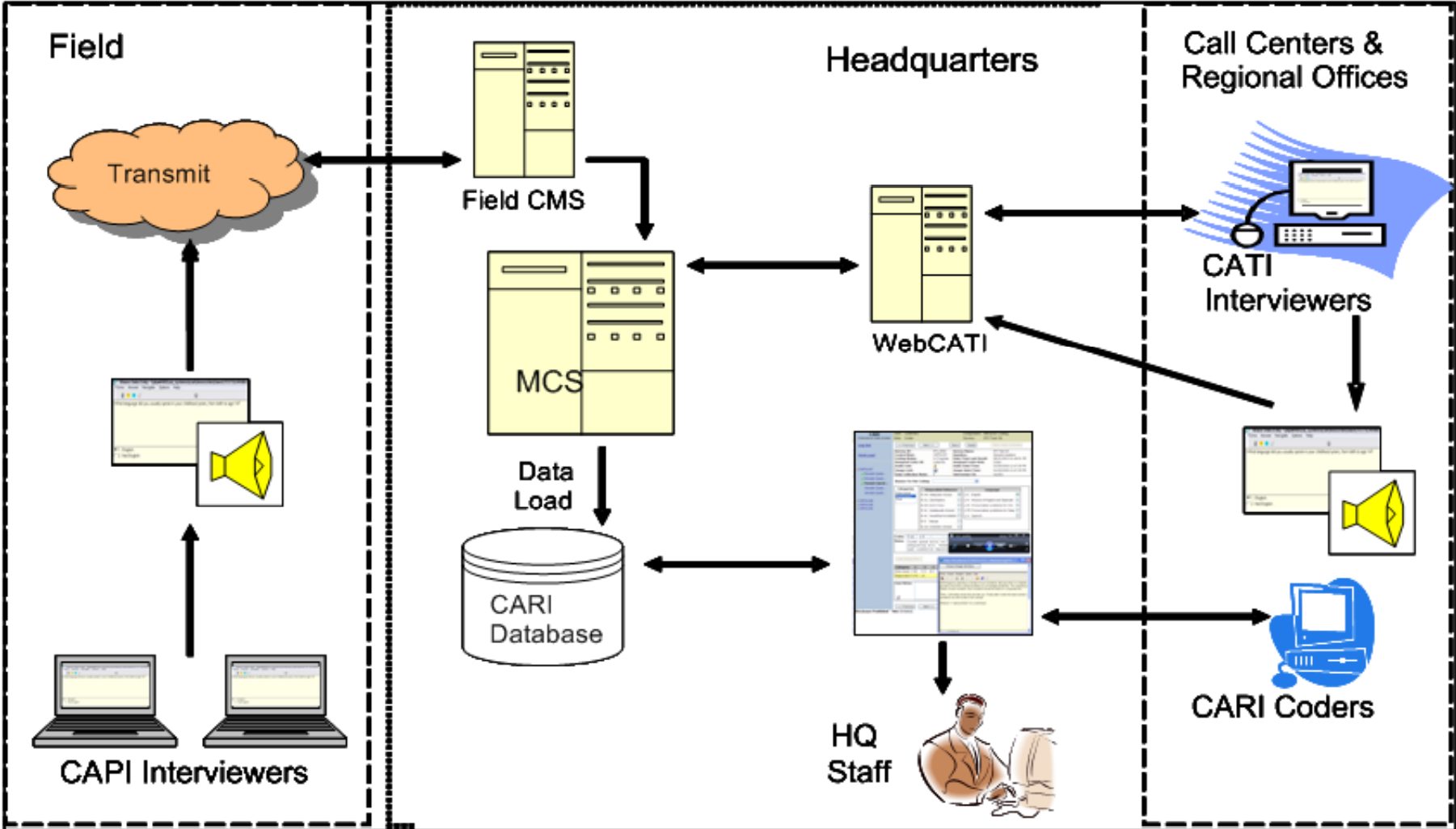
**Case Notes** → Notes: Lorem ipsum dolor sit adipiscing elit. Donec eget elementum dapibus

**Audio Player** → CCC\_GetFile 00:02

**Captured Blaise Screen** → http://localhost:2136/CCC/CCC\_DisplayImageFil...  
Close Image Window  
Forms Answer Navigate Options Help  
We'll begin by selecting a sample of your residents. Because this is a statistic, provide a list of the current residents as of midnight yesterday. The sampling p initials of each resident. Each resident should be listed on a separate line.  
Then, I will briefly review the list with you. Finally after I enter the total number c residents we will include in the sample.  
PRESS \*1\* AND ENTER TO CONTINUE.

Disclosure Prohibited - Title 13 U.S.C.

# Data Flow Overview



# System Integration

- LDAP\*
  - User authentication
- Master Control System (MCS)
  - Import survey data, Blaise audio files & captured Blaise screen images
- Data extraction
  - Reports
  - Analysis

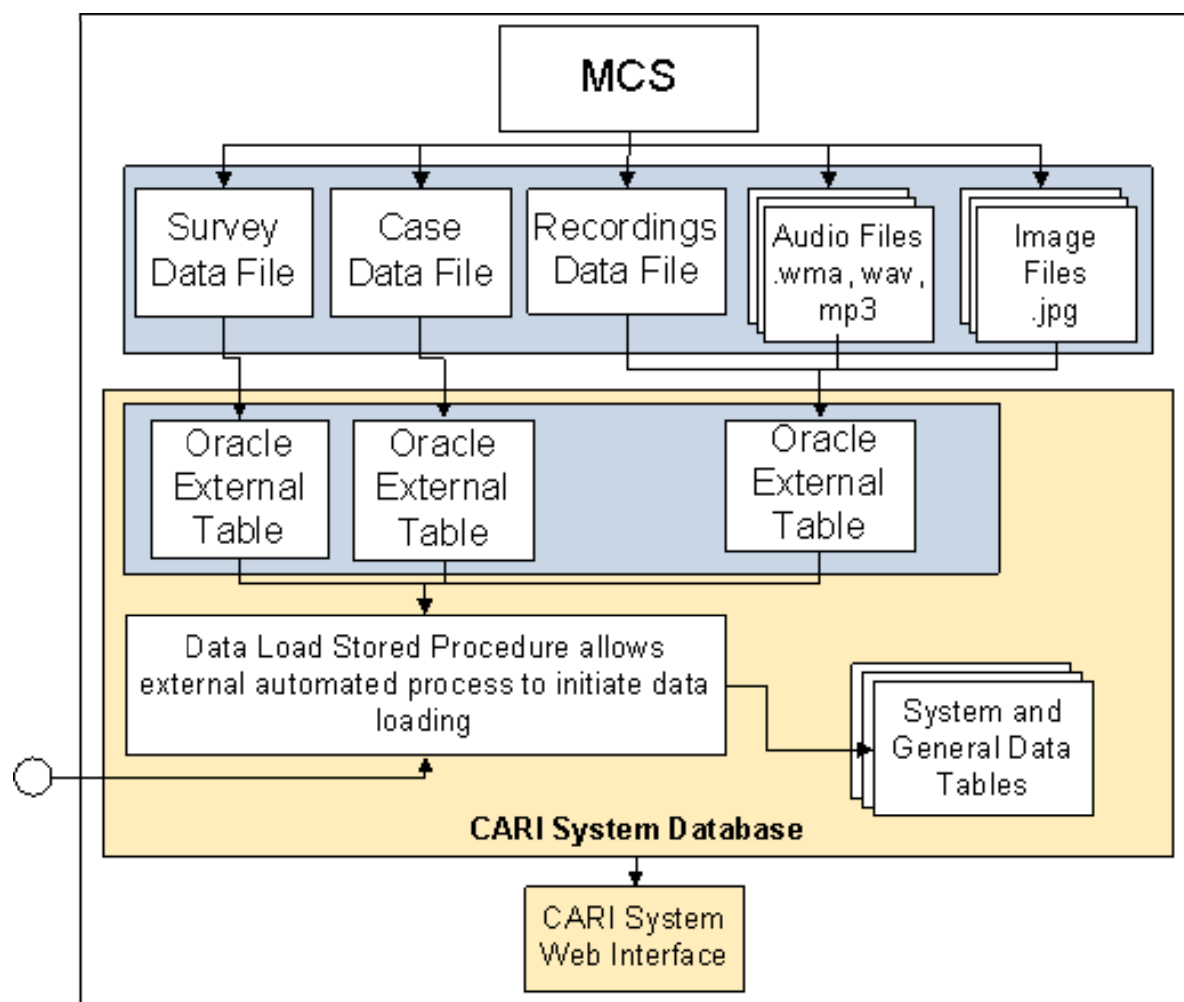
\* Lightweight Directory Access Protocol

# Loading Survey Data - What

- Case's paradata
  - Case ID
  - Question ID
  - Interviewer ID
  - Interview mode
  - Language
  - etc
- Blaise audio files
- Blaise captured screen images
- Survey data can be loaded all-at-once or on a flow basis

# Loading Survey Data - How

- File-based interface
  - Eliminate dependency
  - Freedom of implementation choices
  - Easy maintenance
- Oracle external tables
  - Treat data files like a table
  - Handle Blaise audio files and captured images as part of binary large-objects (BLOBs)
  - Improve performance compared to other alternatives



# Data Extract

- Coding data & notes
- Multiple formats
  - Excel
  - SAS

The screenshot displays the CARI Interactive Data Access web interface. At the top, the user is identified as 'sysadmin' with the role of 'System Administrator'. The current survey is 'RTI P&A Test 10'. A left-hand navigation menu contains several links: Log Out, Select Survey, Assign Staff To Survey, Staff Work Load, Work Load, BC Configure Survey, BC Assign Cases To Sites, BC Assign Cases To Staff, BC Restart Cases, BC Assign IRR Cases, and BC Reports. The main content area is titled 'Select the type of data to extract:' and features a scrollable list of data types. Below the list, a note states: 'When you click extract data, you will be prompted for the download location.' An 'Extract Data' button is positioned at the bottom of the interface.

**CARI**  
Interactive Data Access

User: sysadmin  
Role: System Administrator  
Survey: RTI P&A Test 10

[Log Out](#)

[Select Survey](#)

[Assign Staff To Survey](#)

[Staff Work Load](#)

[Work Load](#)

[BC Configure Survey](#)

[BC Assign Cases To Sites](#)

[BC Assign Cases To Staff](#)

[BC Restart Cases](#)

[BC Assign IRR Cases](#)

[BC Reports](#)

**Select the type of data to extract:**

- Behavior Coding Questions Not Coded
- Behavior Coding Notes
- Behavior Coding Data
- Behavior Coding Reliability Test Notes
- Behavior Coding Reliability Test Data
- Behavior Coding SAS Input Statement for Questions Not Coded
- Behavior Coding SAS Input Statement for BCC Notes
- Behavior Coding SAS Input Statement for BCC Coding Data
- Behavior Coding SAS Input Statement for IRR Notes
- Behavior Coding SAS Input Statement for IRR Coding Data
- Quality Assurance Notes
- Quality Assurance Data
- Quality Assurance Reliability Test Notes
- Quality Assurance Reliability Test Data
- Quality Assurance SAS Input Statement for QAC Notes
- Quality Assurance SAS Input Statement for QAC Coding Data
- Quality Assurance SAS Input Statement for IRR Notes

When you click extract data, you will be prompted for the download location.

**Extract Data**

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