

2020 Census Program Management Review

Systems Related Research Projects Andrea Brinson, Program Manager

4.101 – Automating Field Activities

4.102 – Reducing and Improving Person Follow-up Operations

4.104 – Workload Management Systems and Adaptive Design

8.109 – Logistics Management/Field Infrastructure Study

8.110 – Virtual Office Computing Environment and Field Office
Test Bed

March 8, 2013



WBS 4.101 - Automating Field Activities (Cont.)

Recent Accomplishments:

- Enumeration of non-responders using a mobile device:

The second phase of software development began November 29, 2012 and will continue through March 20, 2013.

The Enumeration Application received the Authority to Operate from the Integration & Test Environment on February 13. This allows the use of Title 13 data in the field.

The second round of Enumeration Application Usability Testing was completed and conducted from January 28 through February 14.



WBS 4.101 - Automating Field Activities (Cont.)

Recent Accomplishments:

- Address Listing and Mapping using a mobile device:

The second phase of software development was complete on November 27. End to end testing of the current product took place December 10-14.

The Listing and Mapping Application received the Authority to Operate from the Integration & Test Environment on February 13. This allows the use of Title 13 data in the field.

The second round of Enumeration Application Usability Testing was completed and conducted from January 28 through February 14.

- Operational Control System:

High level capability requirements for the system were developed. These requirements were delivered to various software development units within the agency for consideration. Leadership has decided to develop two parallel operations control systems from different internal software providers.



WBS 4.101 - Automating Field Activities (Cont.)

Risk Highlights:

- This project has dual goals of enabling the research agenda of other teams through the development of field tools and conducting its own research to find areas where field efficiency can be realized.
- Research questions are being developed by this team in anticipation of software still to be developed. If this software is delayed or cancelled some research questions may not be fully answered.
- Leadership decided to develop two parallel Operations Control System from different internal software providers. This created a new challenge of making sure that the requirements are clearly understood by the developers of both Operations Control Systems.



WBS 4.101 - Automating Field Activities (Cont.)

Challenges:

- The research and testing objectives in the Listing and Mapping arena may not be met by the Listing and Mapping Application currently under development.
- Current policy could constrain some planned implementation if not properly identified and addressed. For instance providing turn by turn directions for an employee to navigate to an assigned case will only work for the first five minutes of travel time because of the security requirement to lock the device after five minutes of inactivity.
- Developing requirements that are clearly understood by the developers of both Operational Control Systems.



WBS 4.101 - Automating Field Activities (Cont.)

Near-term Project Focus Items:

- Enumeration:

Continue software development with an emphasis on quality control functionality. In particular focus will be on providing quality control features at the time of production interview. For example a GPS check if the enumerator is measured to be too far away from where we believe through past records the unit exists.

End-to-End testing of Quality Control functionality will be conducted in April.

- Listing and Mapping:

Continue software development with an emphasis on quality control functionality. We are looking at development of an Alternative design to test during the R&T phase for address list updating.

Continue to investigate and refine alternate business processes such as the Hybrid Listing concept.



WBS 4.101 - Automating Field Activities (Cont.)

Near-term Project Focus Items:

- Operational Control System:

Work collaboratively to reach a shared understanding of the requirements between the AFA project and the two software development teams.

Begin the development of the two Operational Control Systems.



WBS 4.102 – Reducing and Improving Person Follow-Up Operations

Recent Accomplishments:

- Tailoring Contact Strategies
 - The team received responses (and enumerator manuals) from the following countries as to how they conduct their versions of non-response follow-up:
 - Canada
 - England and Wales
 - Ireland
 - New Zealand
 - 2013 Census Test
 - The team participated in the development and attended demonstrations on the enumeration application.
 - The team drafted functional requirements for case management within the enumeration application.



WBS 4.102 – Reducing and Improving Person Follow-Up Operations (Cont.)

Recent Accomplishments:

- Field Staff Work Efficiencies
 - The team reviewed time and motion studies from previous census field operations.
 - A checklist of field tasks to be measured by the Time and Motion Study has been developed.
 - The team has begun programming software to be used by the time and motion observers.

- Field Operations Consolidation

A sub-set of the team consolidated previous scenario work (graphic views of field operations/timeline) into three scenarios that represent a range of options for streamlining/modifying field operations:

- Least Change
- Medium Change, and
- Most Change



Change is measured by the ability to condense the timeline and/or reduce the number of field operations



WBS 4.102 – Reducing and Improving Person Follow-Up Operations (Cont.)

Recent Accomplishments:

- Payroll Methodology

The R&M Directorate, produced a detailed work plan and schedule for operationalizing their recommended modifications to the pay rate methodology. If the research defined in this work plan is successful, this plan will produce a revised pay rate methodology that can be used for setting pay rates for Test #29.



WBS 4.102 – Reducing and Improving Person Follow-Up Operations (Cont.)

Risk Highlights:

- The team is re-evaluating project risk and will report out on risk at the next Program Management Review.

Challenges:

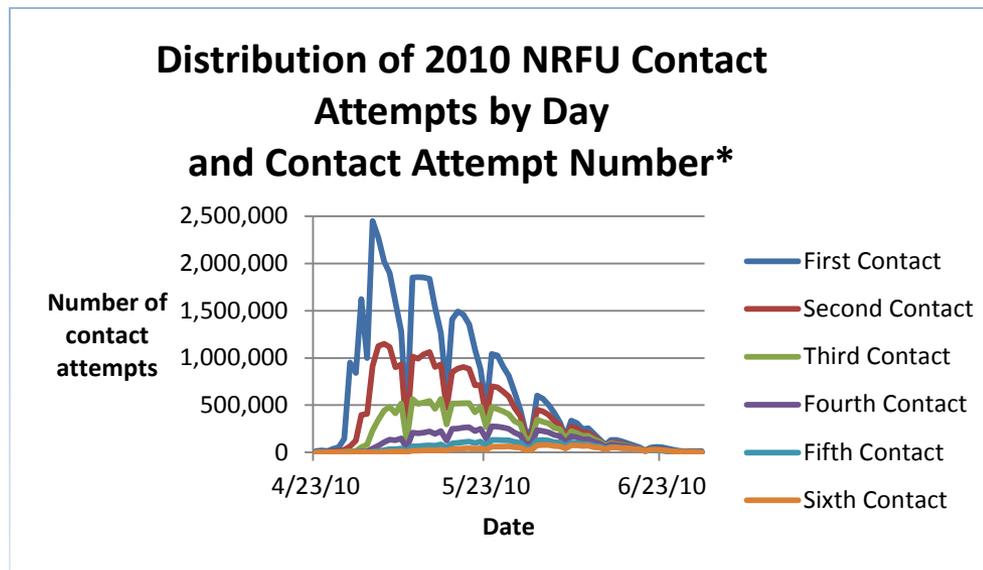
- There has to be a workload management system or process in place to manage field work in time for the 2013 Census Test.
- Additional complexity in the 2013 Census Test (multiple devices, locations, and OCS systems) may impact the results of the Time and Motion Study.



WBS 4.102 – Reducing and Improving Person Follow-Up Operations (Cont.)

Near-term Project Focus Items:

- Tailoring Contact Strategies
 - Analyze 2010 NRFU data and past American Community Survey data to aid research objectives.



*Please note this graph is in draft form and is an example of the analysis using the 2010 NRFU data.

WBS 4.102 – Reducing and Improving Person Follow-Up Operations (Cont.)

Near-term Project Focus Items:

- Tailoring Contact Strategies (continued)
 - Activities for the 2013 Census Test:
 - Continue to participate in the development of the enumeration application.
 - Focus on the determination of paradata necessary to analyze results
 - Identify/re-define the sample design and add adaptive design.
- Field Staff Work Efficiencies
 - Activities for the 2013 Census Test:
 - Continue programming software for the Time and Motion Study.
 - Develop Time Study log sheet for self administration by enumerators

WBS 4.102 – Reducing and Improving Person Follow-Up Operations (Cont.)

Near-term Project Focus Items:

- Field Operations Consolidation
 - Finalize the three scenarios along with documenting changes to specific operations, justification (i.e., potential benefits) for the proposed changes, potential risks, and assumptions and constraints inherent in the proposed change.
 - Present the scenarios to the Decennial Leadership in March for a go no-go decision on which scenario(s) to further research in March – September 2013.

- Payroll Methodology

The R&M Directorate will conduct research to operationalize their recommended modifications to the pay rate methodology.



WBS 4.104 – Workload Management

Project Description:

- The Workload Management project provides the application and systems development support for the 2020 Research and Testing. This project has dual goals of enabling the research agenda of other teams through the reuse of current systems to support the tests. In addition, it is conducting its own research in order to provide proposed alternative system architectures to support the 2020 Census design.
- Workload management will support all modes of data collection including - paper, internet, telephone (inbound and outbound) as well as field data from the enumeration device.
- Workload Management will identify, test, and refine options that integrate and potentially consolidate the response processing, universe control, cost and progress reporting, re-interview, and data capture as well as the operations control system for the modes into one integrated management architecture.

WBS 4.104 – Workload Management (Cont.)

PROJECT OBJECTIVES:

- The Workload Management team will research alternative architectures to optimize efficiency, consistency, tracking and reporting of workload . Decisions will be based on solid evidence and analysis of trade-offs aimed at achieving the goals of conducting the 2020 Census at a lower cost than the 2010 Census.
- Workload Management is integrating with corporate Adaptive Design efforts to assist with development of adaptive design capabilities and to explore and define its application to 2020 operations.



WBS 4.104 – Workload Management (Cont.)

Recent Accomplishments:

- Workload Management Re-Use sub-team completed the FY13 Test Functional Diagram depleting all systems in 2013, the interfaces between the systems with the data to be exchanged, as well as the transfer protocol.
- The team is currently working with the system owners to complete the SEI In-Sourcing Fact Sheet to document the systems and the SEI Cost Proposal to document system development cost for the 2013 Test.
- Workload Management Telephony sub-team completed a cost benefit analysis of IVR data collection solutions. The analysis concluded that IVR for data collection was not cost effective.

WBS 4.104 – Workload Management (Cont.)

Recent Accomplishments:

- The 2020 R & T Teams' detail solution requirements and specifications collected by Workload Management are available in the requirements tool Quality Center.
- The team is currently working with the IT Directorate, who has provided 20RPO with a solutions architect to work with the 20RPO and Enterprise stakeholders to develop the proposed alternative architectures in support of the 2020 Census design.



WBS 4.104 – Workload Management (Cont.)

Risk Highlights:

- New software systems and interfaces are developed/built in time for workload Management to accomplish 2020 R&T Tests.



WBS 4.104 – Workload Management (Cont.)

Challenges:

- There may not be enough call centers in the United States to handle the call volumes from respondents for providing telephone assistance and taking responses over the phone. Workload Management is looking into virtual telephone solutions where agents can work in locations (including their homes) other than a “brick and mortar” call center to support telephone operations.
- The 2020 Census is looking at the in-house solutions such as the paper data capture system and Internet system as the possible solution for the 2020 Census. The challenge is will the in-house systems be able to demonstrate the capability to meet 2020 Census requirements in time for us to make a “build vs. buy decision.”

WBS 4.104 – Workload Management (Cont.)

Near-term Project Focus Items:

- Define 2013 Census Test integration software and further define systems interface protocol.
- Complete and analyze the SEI In-Sourcing Fact Sheet and Cost Proposal requirements to determine application developers and hardware needs.
- Continue requirements management/change control system for detailed solution requirements and specifications.
- Initiate a risk management register for the Re-Use sub-team.



WBS 4.104 – Workload Management (Cont.)

Near-term Project Focus Items:

- The Telephony sub-team is doing market research on decentralized call centers for 2014 Census Test.
- Workload Management will develop the architecture and design of the 2014 Census Test incorporating the research objectives of real-time vs near real-time, modernize to increase efficiency, and a centralized consolidated HQ workload management system.

WBS 8.110 – Virtual Office Computing Environment and Field Office Test Bed

Project Description:

- The Virtual Office Computing Environment (VOCE) is a Research & Testing (R&T) development project to identify, test, and refine options that :
 - Develop a VOCE to support the 2020 Census R&T Program.
 - Deploy the VOCE to a physical Field Office Test Bed to conduct field tests for the 2020 Census R&T Program.
 - Identify and test options for providing other IT Infrastructure systems for the Field Offices in support of the 2020 Census R&T Program.

WBS 8.110 – *Virtual Office Computing Environment and Field Office Test Bed (Cont.)

Project Description:

- The VOCE is an infrastructure system that provides office computing for users anywhere using a broadband Internet connection to perform Local or Regional Census Office IT.
- The VOCE will be built using the existing and scalable Enterprise Virtual Desktop Infrastructure (VDI) solution.
- The Field Office Test Bed is a physical location where a set of standard office hardware (PCs, printers, etc.) can be deployed with access to the VOCE for the purpose of testing.

*Change Request pending to align recent project name change with the baselined documentation.

WBS 8.110 – Virtual Office Computing Environment and Field Office Test Bed (Cont.)

Recent Accomplishments:

- Redefined the project scope to include providing the IT Infrastructure systems for the Field Offices.
- Revised the project research questions:
 - Is it possible to allow network printing through the VDI in an office with a local shared Internet connection without breaking security restrictions or installing a Bureau of the Census (BOC) network in every site, and how?
 - What is the most cost efficient telephone system to supply to the offices in order to meet the functional and security requirements in an office with no direct connection to the BOC network?
 - What is the most cost efficient electronic communication system to supply to the offices and field staff in order to meet the functional and security requirements among office and field staff?
 - Could conferencing technology be utilized in order for staff (field to field, office to field, RO to office) to communicate in other ways besides face to face?
 - Are there tasks that the office or field staff perform manually that could be automated to increase cost efficiency?

WBS 8.110 – Virtual Office Computing Environment and Field Office Test Bed (Cont.)

Recent Accomplishments:

- Identified the VOCE System Requirements.
- Identified the initial VOCE Software Requirements.
- Identified the Test 20 IT Requirements.
- Completed the Scientific Review Information Sheet.
- Completed the Con OPS review to develop WBS and project activities.

WBS 8.110 – Virtual Office Computing Environment and Field Office Test Bed (Cont.)

Risk Highlights:

- In order to deploy the VOCE, stand up the Field Office Test Bed, and conduct field tests for the 2020 R&T program, the LCO site selection must complete on schedule. If the LCO site selection is not completed by the scheduled date, then the LCO may not be able to open in time for to support scheduled testing.
- The current DAPPS application is VDI compatible. If DAPPS is replaced with a system that is not VDI compatible, then its replacement system may not have the capability to perform the required RCC and LCO payroll functions in a virtual environment.
- The current MarCS application is VDI compatible. If MaRCS is replaced with a system that is not VDI compatible, then its replacement system may not have the capability to perform the required RCC and LCO matching and coding functions in a virtual environment.

WBS 8.110 – Virtual Office Computing Environment and Field Office Test Bed (Cont.)

Risk Highlights:

- The scope for this project was changed to include providing the IT Infrastructure for the Field Offices. This project currently does not have funding to support the additional work. If the funding request to support the IT Infrastructure is not allocated, then the project will not be able to provide the IT Infrastructure to support the Field Offices and respond to the research questions.

WBS 8.110 – Virtual Office Computing Environment and Field Office Test Bed (Cont.)

Challenges:

- Adapting to the changing test schedule.
- Additional critical applications required to support functions in the Field Offices may be identified that are not VDI capable.

WBS 8.110 – Virtual Office Computing Environment and Field Office Test Bed (Cont.)

Near-term Project Focus Items:

- Requirements
 - Continue to define the VOCE requirements for future test releases.
- Budget
 - Develop cost estimate and submit budget request to support the IT Infrastructure requirements.
- VDI Application Integration Request Forms
 - Complete VDI Application Integration Request Forms and submit the request to the LTSO as applications are identified to be added to VOCE system.