

2020 Census Program Management Review

Census Enterprise Data Collection and Processing (CEDCaP) System View (Decennial)

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Business Case

Historically the Census Bureau developed new and unique data collection and processing systems for each survey or census. We built multiple, similar systems tailored to the organizations within our Enterprise rather than providing functional capabilities that met requirements across the Enterprise. With the FY15 CEDCaP Budget initiative, the Census Bureau will bring an Enterprise approach to data collection and processing. The Enterprise solution will be mature and proven well in advance of the 2020 Census. This approach not only decreases costs relative to the previous approach, it also decreases risk.

Several Key CEDCaP Points

(not in order of priority)

1. The current candidate solutions chosen for the CEDCaP initiative are considered the bureau's best-of-breed within the data collection area; however, this area will require targeted technical analyses including COTS/buy options to validate they are the best overall solutions.
2. CEDCaP Baseline 1 (B1) is the same as Adaptive Survey Design Initiative (ASDI) B1. The ASDI team will be the system integrator for CEDCaP B1 (targeted for ASC production October 2015) and the CEDCaP team will be the system integrator for all future baselines.
3. Future CEDCaP baselines will be contingent upon the CEDCaP Transition Plan (Initial release targeted for October 2014) , and driven by 2020 Decennial, ACS, and ECON Census key dates along with the project's ability to deliver capabilities with minimal production impact. Integrated into 2020 Decennial IT System Roadmap & Implementation Plan which should include system deployment risk and mitigation strategy.

Understanding the Notional Architecture Diagram

Name	Symbol	Meaning
Rounded Edge		Used to symbolize a specific system or set of subsystem
White Boxes		Top box defines system and next set define high-level capabilities
System Number/ Name		Used to reference and identify a specific systems within the diagram
Blocks of Color		Groups systems into common areas specific to component processing
Arrow Colors		Identifies which system group (“blocks of color”) the data provider resides
Arrow Numbering (i.e. ICD# or ICD#.#)		The first number identifies the “system number” of the data provider and second number identifies the “system number” of the data consumer
Existing		Requires no CEDCaP specific change
New		System that currently does not exist
Modified		Minor architectural changes (i.e. interface changes, service enable, etc.)
Re-engineered		Major design changes as direct result of meeting CEDCaP requirements
Targeted Production Date		Initial CEDCaP baseline into production
Data Provider (System)		The system that will be providing data to be consumed
Data Consumer (System)		The system that will be consuming data from the provider
External Interface		Depicts interface with external component/system

CEDCaP Enabling Capabilities

<u>Projects</u>	<u>Status</u>	<u>Status/Description</u>
Enterprise Development, Integration, and Test Environment (EDITE)	N	Deployment of enterprise-wide development, integration testing, and staging environments to include standardized set of hardware, middleware, development, CM and testing tools separate from the production environment .
Service Oriented Architecture (SoA) Middleware	N	Deployment of SOA architecture , including Enterprise Service Bus (ESB) to enable the Census Shared Services platform in support of system data integration and the use of application programming interface (API).
Administrative Records and Response Data Access Layer (AR-RDAL)	N	Automates data accessibility to admin records and previous survey data (i.e. CES, 2020 Planning, BRM, CARDS, etc.) utilizing SOA infrastructure exposing application programming interface (API) as a set of vendor-neutral and technology-neutral services. The AR-RDAL will utilize the DMS system for authentication and access to data sources.
Control and Response Data System (CaRDS)	N	CaRDS handles processing in the two survey lifecycle data processing areas that border the CEDCaP “Data Collection” component, “Sample Design & Implementation” and “Data Editing , Imputation, and Estimation” .
Content Metadata (CoMet)	N	CoMET is part of the “Survey Design” component of the survey lifecycle and addresses the importance of standardizing the metadata at the very beginning of the survey lifecycle process. The instrument authoring solution and content metadata repository. Standardizes input requirements across modes of data collection including metadata standardization across surveys and Censuses .
IT Infrastructure Scale-up for 2020 Decennial Census	N	ImpleSize and design systems to appropriately accommodate 2020 Decennial scaling, disaster recovery, and availability requirements. (i.e. EDITE, SOA, MOCS, AR-RDAL, IOCS, MCM, IMS, CLMS, UTS, Centurion, iCADE, CaRDS)

CEDCaP Data Collection Capabilities

Projects	Systems/Solutions	Status	Status/Description
Adaptive Survey Design Initiative (ASDI)	Multi-Mode Operational Control System (MOCS)	N	The core Adaptive Survey Design Initiative (ASDI) solution, this transaction-based system serves as the primary mechanism for operational control across survey modes. MOCS can be considered the “Executor” and operational brain behind conducting dynamic case allocation and workflow based on executing business rules.
	Concurrent Analysis and Estimation (CAES)	N	CAES houses statistical models used to provide input for multi-mode operational control business rules.
Unified Tracking System (UTS) – MOCS Integration (UMI)	UTS	R	UTS will be the central aggregation point for paradata for all surveys, and provide overall dashboard monitoring and reporting of the survey response data collection process.
Centurion	Centurion	R	Web-based framework for the design, delivery, and execution of surveys, censuses to respondents for online data collection over the Internet.
eCorrespondence	eCorrespondence	N	Aims to combine the functionality of BOC major public web facing applications that would include allowing individual respondents to create user accounts where they will be able to set survey response mode preferences, check filing status, view FAQs and communicate with the Census help desk via secure message and chat among other features.
Integrated Capture and Data Entry (iCADE)	iCADE	R	Comprehensive scanning data capture solution for paper based data collection operations. Re-engineering dependent upon meeting Decennial DR and availability needs.
	Census Automated Forms Engine (CAFE)	R	Will design and render paper instruments and provide postscript files for in house printing and all commercial print deliverables. Re-engineering of AMGRAF functionality.

CEDCaP Data Collection Capabilities (Cont'd)

Project	Systems/Solutions	Status	Description
Interviewing Operational Control System (IOCS)	Respondent Contact Management Service (RCMS)	N	Maintains contract information for respondents, addresses, phone numbers in a near real-time basis.
	IOCS	N	Workload management system for field related data collection. Used as the standard tool for field managers to control, track, and manage survey/census workloads and field workforce. Introduces the use of field worker characteristics (i.e. location, language, availability, experience, etc.) with additional parameters (i.e. situational, weather, case propensity, best time to contact, priority, etc.) to allow field automation of workforce planning (i.e. staffing needs, case routing, case assignment).
	Case Management	N	Provides desktop case management at field worker level and interfaces with mobile case management. Transmits, receives and closeout individual cases. Renders field instrument and pushes mobile app to device.
	Interviewer Management Service (IMS)	N	The resource manager and will maintain individual field representative data (i.e. surveys worked, multi-lingual skills, re-interview/observation results, past performance, availability, location, accountable inventory, etc.)
	Mobile Case Management (MCM)	N	Provides mobile device level survey case management and dashboard for disconnect mode. Includes transmission and misc utilities from the device.
Corporate Listing and Mapping System (CLMS)	Listing and Mapping (LiMA)	R	A single, scalable, automated corporate instrument that provides accurate listing and mapping updates to the Geography Division's Master Address File/Topologically Integrated Geographic Encoding and Referencing System (MAF/TIGER).
Enumeration	Enumeration System	N	Mobile data collection of respondent survey/census information via Census employee.

Questions



The End