2020 Census Detailed Operational Plan for: 14. Update Enumerate Operation (UE)

A New Design for the 21st Century

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Approvals

This UE Detailed Operational Plan has been reviewed and approved for use.

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1. Document Purpose

The 2020 Census Detailed Operational Plan for the Update Enumerate (UE) operation is intended for use by U.S. Census Bureau managers, staff, contractors, and other internal and external stakeholders working on the 2020 Census. The document presents the detailed operational design for the 2020 Census UE operation and includes a summary of the operational processes involved, their inputs, outputs, controls, and the basic mechanisms employed to conduct the operational work.

Anticipated uses of this document include the following:

- Communication – Documents operational design details for internal and external stakeholders.
- Planning – Documents planning assumptions and key milestones.
- Staffing – Documents staffing needs and strategies.
- Design – Describes operations and flows, which inform design of IT systems, manual processes, and training.
- Development – Identifies business rules and required capabilities to be developed.
- Testing – Provides a basis for developing integrated test plans for IT systems and processes.

This document complements the 2020 Census Operational Plan, which presents the 2020 Census operational design and covers all operations required to execute the 2020 Census, starting with precensus address and geographic feature updates and ending once census data products are disseminated and coverage and quality are measured.

2. Operational Overview

2.1 Operation Purpose

The Update Enumerate (UE) operation is designated to occur in areas where the initial visit requires enumeration while updating the address frame. The majority of the operation will occur in remote geographic areas that have unique challenges associated with accessibility. In the UE operation, field staff update the address and feature data and enumerate respondents in person. The primary functions of UE include:

- Verifying and updating the address list and feature data for tabulation of the 2020 Census.
- Determining the type and address characteristics for each living quarter (LQ).
- Enumerating respondents at housing units (HUs) within the UE geographic areas.

UE can occur in the following geographic areas:

- Remote Alaska.
- Areas that were a part of the 2010 Remote Update Enumerate operation, such as northern parts of Maine and southeast Alaska.
- Select tribal areas that request to be enumerated in person during the initial visit.

2.2 Background

2.2.1 2010 Operational Overview

In 2010, the Update Enumerate Operation (UEO) was responsible for the planning and execution of the following operations:

- Update Enumerate Production (UE)
- Update Enumerate Quality Control (UE QC) (suboperation under UE)
- Remote Update Enumerate (RUE)
- Remote Alaska (RA)

Each operation of the 2010 Census UEO is summarized below.

UE Production

The UE operation methodology was for enumerating communities with special enumeration needs in geographical areas classified as Type of Enumeration Area 5 (TEA 5). The parameters for TEA 5 included American Indian reservations, resorts (seasonal vacant), and the colonias (small, unincorporated communities along the Texas/Mexico border).

During UE Production, the enumerators canvassed their assignment area (AA) and conducted a personal visit at every address to update or add residential addresses, determine the Census Day status of the HU, update the census maps, and conduct an interview to complete a paper questionnaire. UEO enumerators also completed a questionnaire for any additional addresses they discovered while canvassing their AA.

UE QC

The purpose of the 2010 UE QC operation was to measure and improve the quality of data collected during UE Production. The intent of the operation was to detect and deter data falsification and identify any enumerators who did not understand field procedures or followed procedures incorrectly. When problems with an enumerator's work were discovered, he or she received more training or was released, and other completed assignments from the enumerator were subject to further Quality Assurance.

RUE

The Census Bureau conducted the RUE operation in sparsely populated communities in very remote areas (TEA 3). These geographical areas were not eligible for the Local Update of Census Addresses (LUCA) program or the Address Canvassing (ADC) operation. The geographical areas comprising TEA 3 were remote areas in Maine and Alaska.

The RUE operation procedures were similar to the UE Production with the exception that enumerators canvassed their AA only once and determined HU status and household data during their first pass.

RA

The RA operation focused on the enumeration of Alaska Native villages. Alaska is big and sparsely populated, which presents specific challenges to conducting enumeration. There are virtually no road systems outside of larger cities, the state has an extreme climate, there are few or no daylight hours during traditional census time frames, and the state has a very diverse population. RA enumeration has unique challenges associated with accessibility to communities in Alaska's most remote areas, where population ranges from a few people to several hundred people. Communities are widely scattered and rarely linked by roads. Most communities are accessible only by small-engine airplane, snowmobile, four-wheel-drive vehicles, dogsled, or some combination thereof.

The RA operation procedures were similar to the UE Production.

2.2.2 UE in 2020

The 2020 UE operation was originally planned to be a paperless operation and to use a single automated platform to collect both listing and enumeration data. The original UE area covered approximately 12 million housing units. In 2017, the decision to replace ECaSE Automated Listing and Mapping (ALM) functionality with the existing Listing and Mapping Application (LiMA) required a redesign to the enumeration portion of the operation. The operation could no longer collect listing and enumeration data using the same device, because LiMA requires a laptop and the ECaSE-Enumeration software requires a mobile phone. It was determined at that time that enumerating the entire 12 million housing unit universe of UE by paper and then processing the completed questionnaires was neither cost effective nor logistically feasible. This resulted in the creation of the 2020 Census Update Leave operation. The areas originally planned for UE will now be split into the two TEAs, with a small portion of the original workload remaining with UE while the majority will be covered by UL. The remaining workload in UE is focused on very remote areas of the nation and select American Indian Areas that requested to be enumerated in-person.

The 2020 Census UE operation is leveraging processes similar to the 2010 Census UEO. The 2010 Census UEO was paper-based, and the 2020 Census UE operation is a paper-based operation for both listing and enumeration.

The primary difference between the 2020 Census UE and the 2010 Census UEO are the geographical areas that the operation will enumerate. Areas that were part of 2010 UEO that are not part of 2020 UE are covered by the Self-Response or Update Leave operations.

The estimated UE workload is shown in the table below:

Table 1: 2020 Estimated UE Workload by TEA

TEA	HUs	BCUs
TEA 2 – Update Enumerate	8,050	4,818
TEA 4 – Remote Alaska	26,466	8,798
Total	34,516	13,616

2.3 Design Overview

The sections below present the high-level design for the Update Enumerate (UE) operation. Please refer to the 2020 Census Operational Plan for a complete inventory of design decisions for all 2020 Census operations.

2.3.1 High-Level Operational Design

The design of the UE operation for the 2020 Census includes seven major operational activity areas:

- UE Planning and Preparation.
- UE Operational Workload Management.
- UE Production Data Collection (TEA 2).
- UE Data Collection (TEA 4).
- Paper Field Materials at ACO.
- Paper Field Materials at NPC.
- UE Operation Closeout.

Each of the major activity areas are summarized below. Together, these activities represent the complete set of work needed to conduct this operation.

UE Planning and Preparation

UE conducts the planning and preparation needed for the 2020 Census operation. UE determines effective contact strategies and corresponding business rules for the 2020 Census. Based in part on these contact strategies and business rules, UE systems requirements are developed and approved. UE determines staff needs and performance metrics for all UE field activities, and working with the Field Infrastructure (FLDI) operation, prepares and performs UE-specific training.

UE Operational Workload Management

UE will receive the UE universe and updates from Response Processing Operation (RPO). The initial universe will consist of all basic collection units (BCU) and associated addresses located in TEA 2 and TEA 4 areas, all requiring listing and enumeration. For Remote Alaska, updates to the universe will include the results of UE RA Group Quarters Advance Contact (GQAC) and Transitory Locations Advance Contact (TLAC) activities. Staff at the area census office (ACO) will create work assignments based on geographic areas to be assigned to Census Field Supervisors (CFS). Work assignment creation will consist of the preparation of BCU binders and field materials. UE will monitor progress based on the performance metrics set as part of UE preparation and resolve issues that affect the processing of the operational workload.

UE Production Data Collection (TEA 2)

The UE enumerators visit locations people could live or stay, comparing what they see on the ground to the existing census address list, verifying or correcting the address and location information. Much like ADC, enumerators classify each LQ as a HU, group quarters (GQ),

transitory location (TL), or as nonresidential. A LQ can also be deleted if it no longer exists or is not inhabitable. If the LQ is not classified as a HU, it is either reassigned to the appropriate enumeration operation, in the case of GQs and TLs, or removed from the list for enumeration, in the case of nonresidential. The enumerator will ask if there are additional LQs in the structure or on the property and collect or update that information.

At each HU, an enumerator will attempt to conduct an interview. If someone answers the door, the enumerator will provide a confidentiality notice and an information sheet that contains information about who to count, race and ethnicities, and relationship, and will then verify or update the address information, as appropriate. The enumerator will interview the respondent using a paper questionnaire. If no one is home at an HU, the enumerator will leave a record of visit informing the HU that an enumerator was there and will return at a later time.

UE Data Collection (TEA 4)

UE data collection is unique in TEA 4, RA, because of challenges associated with accessing communities in Alaska's remote areas, where population ranges from a few to several hundred people. The communities are widely scattered and rarely linked by roads. Most of these communities are accessible only by small-engine airplane, snowmobile, four-wheel-drive vehicles, dogsled, or some combination thereof. Because of this, UE will enumerate all living quarters, including GQs and TLs, located in TEA 4.

Because of the timing of the spring thaw across Alaska, RA enumeration begins in late January. Earlier timing for remote enumeration permits travel to areas during periods when the conditions are most favorable. For example, the frozen ground and rivers allow planes to fly in and out, while residents are still at home. Once the spring thaw begins, travel to some areas becomes difficult or impossible, and residents leave home to fish and hunt. Enumerators have to finish work assignments before this happens, or a large part of the population can be missed. The Anchorage ACO manages the enumeration for RA areas.

Paper Field Materials at ACO

Completed work and materials will be delivered to the ACO for check-in and office review. ACO staff will conduct the office review and check in completed work into the Enterprise Censuses and Surveys Enabling Field-Operational Control System (ECaSE FLD-OCS). ACO staff using the ECaSE FLD-OCS then check out completed paper questionnaires to be shipped to a processing center for data capture and BCU binders to the National Processing Center (NPC) for further processing. In addition, any paper rosters (paper response data files) received during TEA 4 GQ enumeration will be checked in and sent to NPC for further processing.

Paper Field Materials at NPC

Completed paper maps and address registers received at NPC will be scanned for archiving and processed using Geographic Update Partnership Software (GUPS). GUPS will be used to digitize mapspots and feature updates from paper maps, and to key address updates from address registers. GUPS will provide an output to update the Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) database for tabulation and accurate geocoding of an address. In addition, any paper response data files received at NPC will be processed.

UE Operation Closeout

When the operation nears completion, UE will begin closeout with the handling of any remaining cases. As the workload is reduced, UE will work with FLDI to reduce staff and collect Census Bureau property. Closeout will include an operational assessment and analysis of data and paradata collected, as well as lessons learned to be applied to the 2030 Census.

The full hierarchy of activities for the UE operation is provided in Appendix C. Each major operational activity area listed above is numbered and then broken down into a numbered set of subactivities, some of which are further broken down into more detailed numbered subactivities or steps.

For a full description of the operational subactivities that comprise the UE operation, see the Detailed Process Description discussions in Section 3 below.

2.3.2 UE Operational Context

The UE operational activities described above are conducted within the context of other 2020 Census operations and programs or data sources that are external to the 2020 Census Program. A “Context Diagram” will depict an operational context by showing the boundary of an operational process, the operational activities it contains, and the information exchanged with its neighbor operations (or other entities) as well as the resources (mechanisms) needed to conduct the operational work.

Figure 1 is a top-level context diagram for the UE operation represented as an Integrated Definition, Level 0 (IDEF0) model. An IDEF0 model of a process (or operation) shows the Inputs, Controls, Outputs, and Mechanisms of the process. These IDEF0 model elements are summarized below and described further in the sections that follow.

The yellow box in the center of the IDEF0 model lists the major operational activity areas for the operation, numbered as given in the UE operation Activity Tree in Appendix C. Specific Information Exchanges (IE) are shown in different colored boxes to represent the Inputs (green boxes on left side), Outputs (orange boxes on right side), Controls (purple boxes on top), and

Mechanisms (blue boxes on the bottom). Boxes to the left of the Inputs indicate the *Provider* of the inputs to the operation (typically another 2020 Census operation or an external source). The Provider of the Controls is noted in the box itself. Boxes to the right of the Outputs indicate the *Receiver* of the outputs (typically another 2020 Census operation or external entity). Each Information Exchange has a name and a unique number for identification purposes.

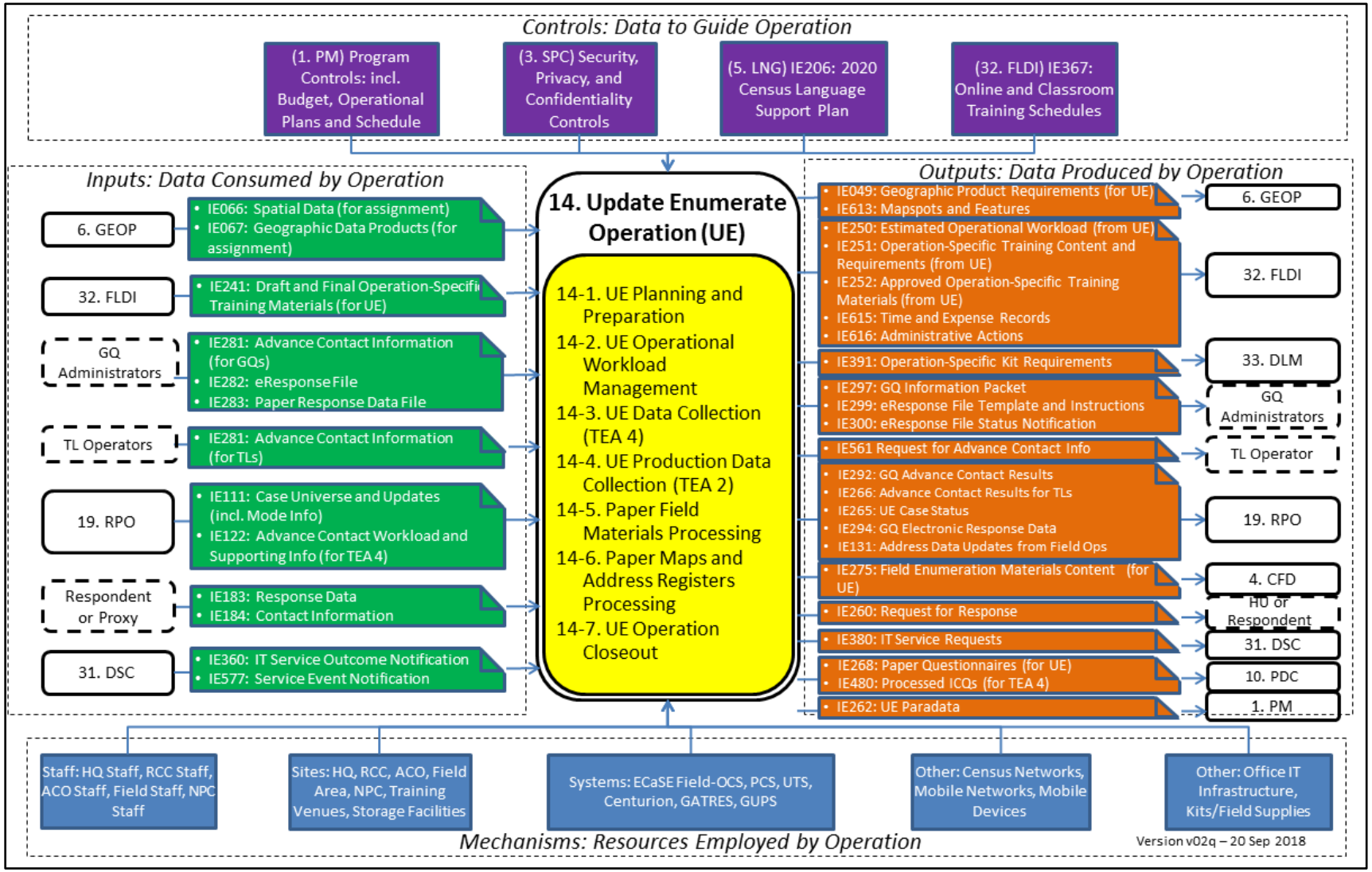

Figure 1: Update Enumerate Operation (UE) Context Diagram

For detailed descriptions of the Inputs, Controls, Outputs, and Mechanisms used by the UE operation, see the sections that follow.

2.3.2.1 UE Operational Inputs

Inputs are the data that are consumed by the operation. The inputs define the amount of operational work that needs to be performed.

Table 2 lists the inputs to the UE operation.

Table 2: UE Operational Inputs

Provider	Information Exchange	Description
6. Geographic Programs operation (GEOP)	IE066: Spatial Data (for assignment)	Spatial data from MAF/TIGER. For UE, spatial data includes: • Map data • Collection Geography Delineations for BCUs and TEAs • Field Management Area (FMA) Delineations for operational use
	IE067: Geographic Data Products (for assignment)	The Geographic Products that will be needed to conduct the specific 2020 Census operations work. For UE, this includes information about the number of addresses in BCUs and is used during the assignment process to determine the number of questionnaire and nonquestionnaire materials needed for the assignment.
32. Field Infrastructure operation (FLDI)	IE241: Draft and Final Operation-Specific Training Materials (for UE)	All materials needed to conduct the training for UE-specific operational activities. This includes course content, instructor materials, and student handouts.

Provider	Information Exchange	Description
GQ administrators	IE281: Advance Contact Information (for GQ)	Information collected during the UE Group Quarters Advance Contact (GQAC). This includes estimated population on Census Day, preferred enumeration method, and scheduled date and time for enumeration. Note: UE only performs advance contact activities for group quarters in TEA 4. Group quarters in TEA 2 are contacted by the GQ operation.
	IE282: eResponse File	An electronic file provided by GQ administrators to the Census Bureau containing response data for all residents/clients within the group quarters. Note: UE only enumerates group quarters in TEA 4. Group quarters in TEA 2 are enumerated by the GQ operation.
	IE283: Paper Response Data File	A paper file containing response data for all residents/clients of the group quarters. Note: UE only enumerates group quarters in TEA 4. Group quarters in TEA 2 are enumerated by the GQ operation.
TL operators	IE281: Advance Contact Information (for TL)	Information collected during the transitory location advance contact activities. This includes address information, whether the transitory location will be open, and scheduled date and time for enumeration. Note: UE only performs advance contact activities for transitory locations in TEA 4. Transitory locations in TEA 2 are contacted by the ETL Operation.
19. Response Processing Operation (RPO)	IE111: Case Universe and Updates (incl. Mode Info)	The set of cases to be enumerated and the expected response method for each case.

Provider	Information Exchange	Description
	IE122: Advance Contact Workload and Supporting Info (for TEA 4)	The initial set of group quarters and transitory location cases in TEA 4 requiring field enumeration with supporting information needed to conduct these activities.
Respondent or proxy	IE183: Response Data	Data provided by the respondent directly to a Census Bureau enumerator in response to census questions.
	IE184: Contact Information	Contact information (e.g., telephone numbers and best time to contact) provided by respondents for follow-up. For UE, the respondent may be a household member or a proxy.
31. Decennial Service Center operation (DSC)	IE360: IT Service Outcome Notification	Notifications and status updates of IT service results provided to the users (requesters).
	IE577: Service Event Notification	Notifications to all users of a service event such as routine operations updates/changes, system problem/incident status or privacy/security incident status. Typically, these are provided as part of the standard message users receive when they call in for help.

2.3.2.2 UE Operational Controls

Controls are the data that guide the behavior of the operation. They are not consumed by the operation, but rather they provide guidance, models, limits, criteria, cutoff dates, or other information that controls the way in which the operational work is performed.

Table 3 lists the controls for the UE operation.

Table 3: UE Operational Controls

Provider	Information Exchange	Description
1. Program Management operation (PM)	Program Controls	Program Control information including: • Budget • Operational Plans and Schedule
3. Security, Privacy, and Confidentiality operation (SPC)	Security, Privacy, and Confidentiality Controls	Laws, policies, regulations, and guidelines related to physical security, IT security, data security and privacy and confidentiality impacts, analyses, and processes. These include but are not limited to Title 13, Title 26, and other laws and policies related to protection of personally identifiable information.
5. Language Services operation (LNG)	IE206: 2020 Census Language Support Plan	Document that specifies the number of languages and level of support for each language to be included in the 2020 Census.
32. Field Infrastructure operation (FLDI)	IE367: Online and Classroom Training Schedules	Schedules for UE-specific training classes. There is no online training for UE.

2.3.2.3 UE Operational Outputs

Outputs are the data produced by the operation. Outputs constitute the results of operational work that has been performed. Outputs produced may be used as inputs or controls to other operations.

Table 4 lists the outputs from the UE operation.

Table 4: UE Operational Outputs

Consumer	Information Exchange	Description
6. Geographic Programs operation (GEOP)	IE049: Geographic Product Requirements (for UE)	Requirements for the Geographic Products that will be needed to conduct the specific Field Operations work. For UE, these include requirements for paper maps and mapspots.
	IE613: Mapspots and Features	Updated mapspot and feature data used for MAF/TIGER updates. Data is captured from paper map update information collected and updated in the field.
32. Field Infrastructure operation (FLDI)	IE250: Estimated Operational Workload (from UE)	Estimate of the number of housing units that will be enumerated within the field for each geographic area. This information is used by FLDI to create a model for estimating the staffing needs by location.
	IE251: Operation-Specific Training Content and Requirements (from UE)	Course content and other training requirements for the UE-specific classroom training materials developed by FLDI.
	IE252: Approved Operation-Specific Training Materials (from UE)	Approval for training content and materials used to conduct classroom training for UE-specific operational activities.
	IE615: Time and Expense Records	Information regarding staff time and reimbursable expenses. Used by FLDI to pay employees.
	IE616: Administrative Actions	Decisions regarding administrative changes for field and office staff made by field operation management. For example, field operations may decide to transfer an employee to another location. FLDI is responsible for documenting these actions in the appropriate systems.

Consumer	Information Exchange	Description
33. Decennial Logistics Management operation (DLM)	IE391: Operation-Specific Kit Requirements	A list of the contents that should be included in the kits provided to the field staff in support of UE.
GQ Administrators	IE297: GQ Information Packet	Information packet that informs GQ administrators about the 2020 Census and the data collection process. This is only for group quarters in TEA 4.
	IE299: eResponse File Template and Instructions	Template for and instructions on how to complete electronic responses. This is only for group quarters in TEA 4.
	IE300: eResponse File Status Notification	Notification to GQ administrator that the Census Bureau has received the eResponse File. This is only for group quarters in TEA 4.
	IE561 Request for Advance Contact Info	A phone call request to obtain Advance Contact information from the Transitory Location Operator. This is only for TLs in TEA 4.
19. Response Processing Operation (RPO)	IE292: GQ Advance Contact Results	Information gathered during advance contact that is required by RPO to process GQ cases. This is only for group quarters in TEA 4.
	IE266: TL Advance Contact Results	Information gathered during advance contact that is required by RPO to process TL cases. This is only for TL cases in TEA 4.
	IE265: UE Case Status	Status information that result from enumeration of UE cases in the 2020 Census Enumeration Case Universe.

Consumer	Information Exchange	Description
	IE294: GQ Electronic Response Data	Data results from group quarter cases provided through electronic files or paper files keyed in by the GQE operation. This information exchange does not include any GQ responses collected on paper forms that are processed by PDC. This is only for group quarters in TEA 4.
	IE131: Address Data Updates from Field Ops	Address data updates provided by field operations. This could include newly identified addresses for hidden units, in-movers, or respondents with a Usual Home Elsewhere, deletes when an address listed in the MAF is determined to no longer exist, and changes in living quarter type (e.g., housing unit to group quarter).
4. Content and Forms Design operation (CFD)	IE275: Field Enumeration Materials Content for UE	Content for the nonquestionnaire materials supporting field enumeration.
HU or Respondent	IE260: Request for Response	Request for respondent/proxy to respond to the 2020 Census.
31. Decennial Service Center operation (DSC)	IE380: IT Service Requests	Requests for information or advice, or a standard change (a preapproved change that is low risk, relatively common and follows a procedure) or access to an IT service.
10. Paper Data Capture operation (PDC)	IE268: Paper Questionnaires (for UE)	Paper questionnaires completed as part of UE enumeration of housing units These questionnaires have been prepared and are ready to be sent for processing at PDC. For UE, this also includes paper questionnaires completed as part of UE enumeration of transitory locations for TEA 4.

Consumer	Information Exchange	Description
	IE480: Processed ICQs (for TEA 4)	Individual Census Questionnaires (ICQ) collected from GQs. These ICQs have been prepared and are ready to be sent for processing at PDC. This is only for group quarters in TEA 4.
1. Program Management operation (PM)	IE262: UE Paradata	Status and progress data related to the data collection process. This includes administrative and procedural data describing the data collection and management process.

2.3.2.4 UE Operational Mechanisms

Mechanisms are the resources (people, places, and things) that are used to perform the operational processes. They include Staff Resources, Infrastructure Sites, Systems, and other Technology Infrastructure.

Staff Resources

Table 5 identifies the Staff Resources employed for the UE operation.

Table 5: Staff Resources used within UE Operational Activities

Staff Resources	Description/Role
HQ staff	HQ staff who manage the UE operation and coordinate activities with regional census center (RCC) staff, area census office (ACO) staff, field staff, and NPC staff.

Staff Resources	Description/Role
RCC staff	RCC staff who manage all UE field operations within their designated census region.
ACO staff	ACO staff who either manage or perform clerical tasks associated with the UE field operations within their designated area. Also includes staff who perform Advance Contact activities and partnership staff who work with villages for outreach.
Field staff	Enumerators and supervisors who perform UE operational activities in the field.
NPC staff	NPC Staff who perform functions specific to UE, including scanning and digitizing paper maps, and keying GQ Paper eResponse Records and paper address registers.

Infrastructure Sites

Table 6 identifies the Infrastructure Sites employed for the UE operation.

Table 6: Infrastructure Sites for UE Operational Activities

Infrastructure Site	Description/Role
Census headquarters (HQ)	HQ site for office work conducted in support of the UE operation. This permanent site in Suitland, MD, manages the operation throughout the country.

Infrastructure Site	Description/Role
Regional census center (RCC)	RCCs manage all operations within their assigned geographic area. RCCs oversee activities of the ACOs. Each RCC will manage a number of ACOs. RCC sites also include the PRAO, which manage activities and operations unique to Puerto Rico and ACOs on the island.
Area census office (ACO)	ACOs responsible for managing all field operations and support activities within the designated area.
Field Area	The geographic area within which field staff perform data collection activities.
National Processing Center (NPC)	NPC is located in Jeffersonville, Indiana, and provides processing support to UE for specific activities.
Training venues	Sites where field staff receive classroom training on both general administrative topics and UE-specific topics. These sites are coordinated via the ACO staff in FLDI.
Storage facilities	Locations within the field area for storing paper supplies and materials.

Systems and other Technology Infrastructure

Table 7 identifies the Systems employed for the UE operation.

Table 7: Systems used within UE Operational Activities

System	Description
Enterprise Censuses and Surveys Enabling Field-Operational Control System (ECaSE FLD-OCS)	Enterprise solution supporting the entire decennial work, including workload assignment and schedule management. UE only uses the Field Operational Control portion of ECaSE.
Production Control System (PCS)	Application system supporting the GQAC and TLAC operations.

System	Description
Unified Tracking System (UTS)	A data warehouse that combines data from a variety of Census Bureau systems, bringing the data to one place and allowing users to run or create reports, analyze surveys, and resource performance. This role-based system provides case-level tracking across modes, drill down capability, and most importantly, pulls cost data into the same system for a more efficient cost impact assessment.
Centurion	An enterprise solution used to receive electronic response files from GQ administrators.
Geographic Acquis-based Topological Real-time Editing System (GATRES)	GATRES is a Census Bureau system within MAF/TIGER that is used to interactively update information in the MAF/TIGER System. GATRES allows concurrent access to the MAF/TIGER System by multiple simultaneous interactive users and is accessible from multiple sites, including the regional offices and NPC.
Geographic Update Partnership Software (GUPS)	A customized geographic information system (GIS) provided by the Census Bureau based on an open-source platform known as QGIS. GUPS is used to support keying the address data and digitizing the mapspots from completed UE paper maps and address registers.

Other Technology Infrastructure employed for the UE operation includes:

- Census network connectivity for data transmission between operational systems and operational sites. This connectivity is provided by IT Infrastructure operation (ITIN).
- Mobile network for field staff support activities performed using the mobile devices. This network is provided by ITIN.
- Mobile devices used by the field staff to record time and expense. Devices are provided by ITIN.
- Office IT Infrastructure at headquarters, RCCs, ACOs, and NPC for conducting UE operational work. This infrastructure is provided by ITIN.
- Kits/field supplies that field staff will use for data collection activities. Kits/field supplies are provided by DLM.

2.4 UE Data Flow and Operational Influences

Figure 2 is an Integrated Operations Diagram (IOD), which describes the design concepts for the response data collection operations for the 2020 Census (stateside and Puerto Rico). This diagram assumes that the frame has been developed and address canvassing operations are complete. The diagram shows the Response Processing Operation (RPO) as the hub of data collection and RPO's interactions with all the other 2020 Census operations that have a role in data collection. The discussion below walks the reader through the diagram, using the circled numbers to help the reader follow the flow.

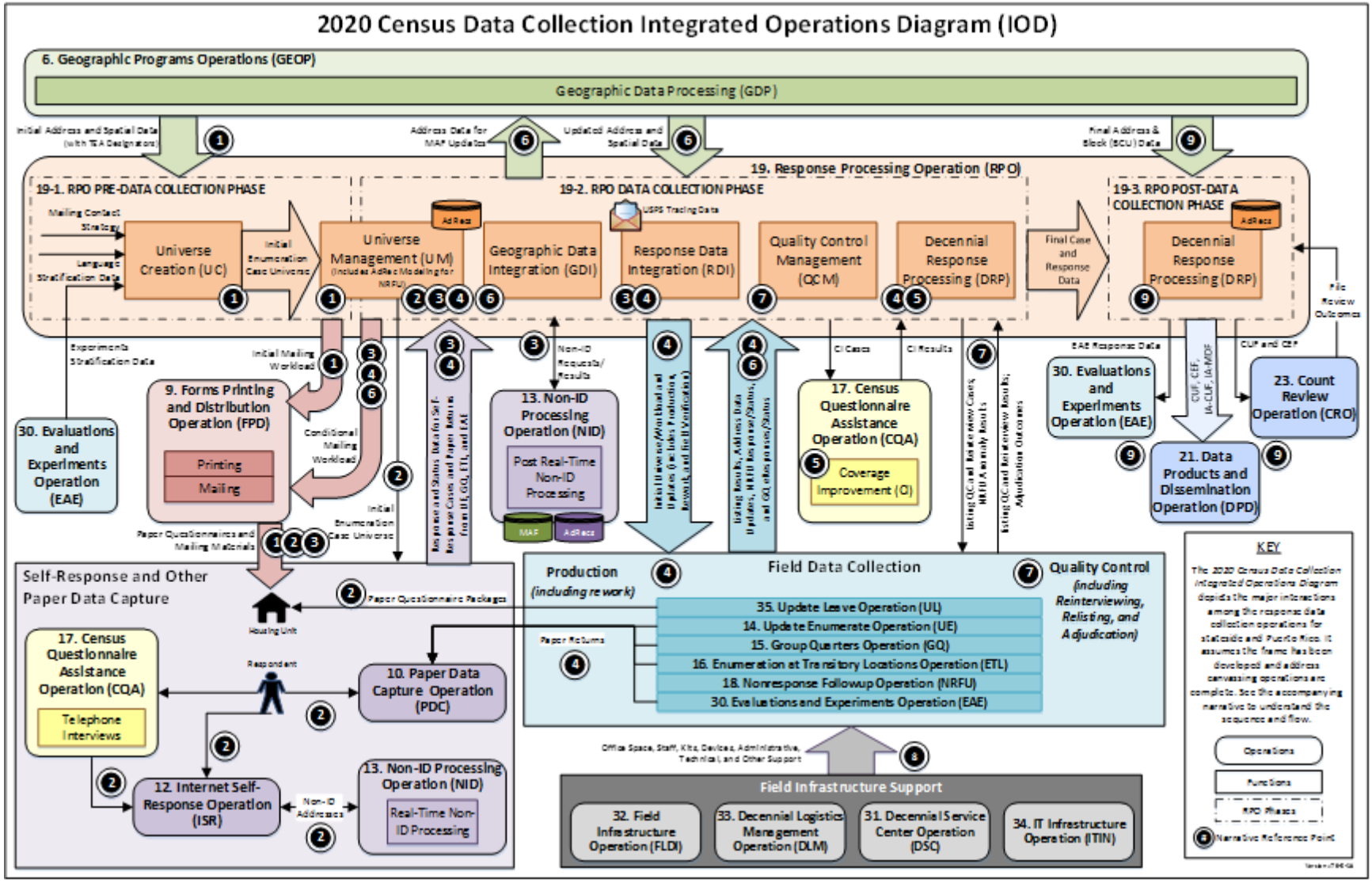

Figure 2: 2020 Census Data Collection - Integrated Operations Diagram (IOD)

Pre-Data Collection

1 Before the start of data collection, the Geographic Data Processing (GDP) component of the Geographic Programs operation (GEOP) sends initial Address and Spatial Data, including the Type of Enumeration Area (TEA) designations, to RPO so it can create the Initial Enumeration Case Universe. RPO also receives the mailing contact strategy (i.e., strategy for self-response stratification) so it can identify which housing units receive which kinds of mailings, language stratification information so it knows which language to use, and experimentation stratification data so it knows which housing units are to be included in what types of experiments. The creation of the initial Enumeration Case Universe and application of the stratification data are done as part of the RPO Universe Creation function.

Based on the stratifications, the RPO Universe Management function creates the initial mailing workload and sends it to the Forms Printing and Distribution operation (FPD), which prints and then mails the appropriate materials to mailable housing units for the Self-Response (SR) TEA. The first two of the five potential mailings for the SR TEA are sent unconditionally to all housing units in this TEA. These mailings are sent in English or English and Spanish based on the language stratification data and may include letters or—based on the self-response stratification—questionnaires.

During Data Collection

2 Once the RPO Universe Creation work is complete, the Initial Enumeration Case Universe is managed by the RPO Universe Management function, which tracks changes to the enumeration universe for future mailings and for the data collection operations.

People living in housing units are encouraged to self-respond through a partnership and communications campaign (not shown on this diagram), through mailings sent by FPD, and through paper questionnaires left at housing units as part of the Update Leave operation (UL).

To make it easy for people to respond and to reduce the paper workload, the Census Bureau is using an *Internet First* strategy for most housing units. Respondents can go to the internet and enter their response using the internet instrument as part of the Internet Self-Response operation (ISR). The internet option offers additional flexibility and allows people to respond in multiple languages. If a respondent calls the Census Questionnaire Assistance operation (CQA), a customer service representative may offer to collect the respondent's information by telephone. The information collected from these telephone interviews is entered by a customer service

representative using an ISR instrument similar to the public-facing instrument used by respondents.

Respondents can also mail paper questionnaire forms. These forms are received by the Paper Data Capture operation (PDC), which uses scanning and imaging technology to capture the information from these forms.

ISR receives the Initial Enumeration Case Universe from the RPO Universe Management function and uses the Enumeration Case Universe to link responses provided through the internet instrument to the appropriate case. If respondents do not have their unique Census ID available, they are still able to complete the census questionnaire as a Non-ID response using the ISR instrument. The Non-ID Processing operation (NID) first attempts to match the address entered by the respondent or customer service representative to a known census address in real-time. For addresses that do not match, the response is still collected and is subject to later Non-ID Processing.

3 Response and status data collected through the various self-response data collection operations are sent (in digital format) to RPO's Response Data Integration function. Any responses collected through PDC or ISR that are submitted in languages other than English or Spanish are translated by staff at the Tucson call center on behalf of these operations before being sent to RPO. RPO's Universe Management function uses the response status data to determine the appropriate actions for the case.

During the self-response data collection time-period, reminder mailings are sent to housing units in the SR TEA. The first reminder is sent to all housing units in the SR TEA using the initial mailing workload as discussed above. Subsequent reminders are conditional and are only sent to those housing units that have not yet responded. The RPO Universe Management function sends a Conditional Mailing Workload to the FPD operation for these nonresponding units. FPD also receives from the RPO Universe Management function a list of mailable housing units in the UL TEA and mails two reminders to these housing units.

Any remaining Non-ID cases are sent by RPO to NID for post real-time Non-ID processing, which attempts to match addresses provided by respondents to known addresses in the Master Address File (MAF) using automated and clerical procedures. As needed, administrative records (AdRecs) are used to supplement the matching process. Most of these Non-ID cases will be from internet responses that could not be matched during real-time Non-ID processing. In addition, post data capture Non-ID processing will be required for paper forms for which the Census ID could not be read during data capture. The results of post real-time Non-ID matching are sent

back to RPO. Based on predefined business rules, some of the responses that are not able to be matched through NID are sent to the field for verification as part of the Nonresponse Followup operation (NRFU).

4 The discussion above covers self-responses for people living in housing units. Special operations also exist to collect data from people living in other types of living quarters or for whom self-response is not a viable option:

- The Group Quarters operation (GQ) enumerates people living in group quarters (e.g., dormitories, correctional facilities, and nursing/skilled-nursing facilities) as well as people experiencing homelessness and receiving services at service-based locations such as soup kitchens. GQ also enumerates people living on maritime vessels and receives administrative records for people living in the Military TEA, which includes both on-base group quarters and on-base housing units.
- The Enumeration at Transitory Locations operation (ETL) enumerates people who are living in special locations—such as recreational vehicle parks, campgrounds, racetracks, circuses, carnivals, marinas, hotels, and motels—and who do not have a Usual Home Elsewhere.
- The Update Enumerate operation (UE) lists and enumerates housing units in areas that pose unique challenges to the standard self-response data collection operations. These housing units are in the UE and Remote Alaska TEAs, which cover remote areas of the country and other small selected areas.

NRFU does not require advance contact activities. For NRFU, the RPO Universe Management function creates an Initial Case Universe/Workload comprising all housing units in the SR and UL TEAs for which a self-response was not received. The NRFU contact strategy is dependent on the results of an AdRec modeling activity. Four possible status outcomes result from this modeling for a given address:

- AdRec Vacant: No one lives there.
- AdRec Delete: There is no housing unit at that address.
- AdRec Occupied: There is a high probability that someone lives there and that the Census Bureau has high-quality data about that housing unit.
- Full Contact: Administrative data are not sufficient to help determine the housing unit status, and a full contact strategy is required.

An initial attempt to enumerate is made for all addresses in the NRFU workload. NRFU sends to RPO information regarding the success of this and any subsequent enumeration attempts as part of the response status data.

AdRec Vacant and AdRec Delete housing units also receive an additional mailing from FPD. The RPO Universe Management function provides this additional mailing workload to FPD (as another type of Conditional Mailing).

RPO removes from the follow-up workload any AdRec Occupied cases that cannot be successfully resolved during the first attempt and triggers one final mailing (from FPD) to these addresses to encourage these households to self-respond. RPO also removes AR Vacant and AR Delete cases that cannot be successfully resolved during this first attempt, provided that those cases do not appear occupied and that information from the United States Postal Service (USPS) about the additional mailing indicates that the unit is either vacant or non-existent. For all other cases, NRFU continues to attempt to enumerate the housing unit until the attempt is successful or the maximum number of attempts has been reached. Additional attempts are made for selected units during the NRFU Closeout phase based on a reassessment of the AdRec modeling results using a relaxed, lower quality threshold.

Self-responses can continue to arrive at any time during NRFU. Accordingly, RPO flags housing units in the follow-up workload for which RPO has received a self-response or tracing information from the USPS that indicates that a return is on its way to one of the paper data capture facilities. NRFU is notified about these flagged households as soon as the information is available so that it can remove the housing units from the daily workload, if possible. Any self-responses that are flagged but later found by RPO to have insufficient enumeration data are added back to the NRFU workload for continued enumeration attempts. The RPO Universe Management function tracks this information and uses it to determine what to include in the next day’s follow-up workload. Housing units that have been successfully enumerated are not included in subsequent follow-up workloads.

For NRFU, field data are collected by electronic devices. The electronic data are sent to the RPO Response Data Integration function, which subsequently provides this information to the Decennial Response Processing function for further processing. Paper questionnaires are used to enumerate at living quarters during UE and at housing units during ETL. These paper questionnaires are checked-in at area census offices (ACOs) and then sent to the paper data capture facilities, where they are scanned and imaged by PDC. PDC sends the captured data and case status information to RPO in digital format.

GQ is primarily a paper operation. Group quarter responses collected on paper questionnaires are checked-in at the ACOs and sent to PDC for scanning and imaging before being transmitted to RPO. Case status updates are sent to RPO as part of the check-in process. GQ data provided in electronic files (eResponses) require additional processing to prepare the data before they are electronically transmitted to RPO. GQ data collected on paper rosters are entered by ACO clerks into the same file format that is used for eResponses. These response data are then sent electronically to RPO.

As part of the Evaluations and Experiments operation (EAE), the Census Bureau may test different questionnaire content and data collection methodologies during the 2020 Census to help evaluate content and modes for the 2020 Census and inform design changes for the 2030 Census. Addresses that are selected to be part of these experiments are identified in the initial universe (see number 1 above). For those addresses, the EAE operation collects the data and provides responses and status of responses to the RPO Response Data Integration function, which subsequently provides this information to the Decennial Response Processing function. Any responses collected by EAE on paper returns are processed by PDC and sent by that operation to RPO.

5 RPO's Decennial Response Processing function performs quality assurance activities as well as coding and other preparation steps on incoming self-response data.

The RPO Universe Management function also supports a Coverage Improvement (CI) activity, the goal of which is to ensure a high-quality census by conducting telephone followup for households where there could be coverage issues on submitted responses. CI is a followup activity and is therefore considered a component of NRFU; however, the CI telephone interviews are performed by CQA. CQA receives from the RPO Universe Management function a set of cases with potential coverage issues and provides the results of these cases back to RPO's Response Data Integration function.

6 As noted above, universe and address updates occur during field operations. Census Bureau field staff may uncover changes to addresses as they perform their daily assignments in any field operation. For example, a UL or UE lister may add an address or find an error in the address or geographic data based on the listing activities, or a NRFU enumerator or a UL lister may go to an address and find an additional unit such as a garage apartment located on the premises. All listing results and other address changes are sent to the RPO Geographic Data Integration function, which passes the information on to the GDP function in GEOP.

Changes to the address list may also come from other sources such as appeals from the Local Update of Census Addresses Operation (LUCA), the review of addresses performed by the Count Review Operation (CRO), and updated files from the postal service. The GDP function within GEOP updates the address data and sends these RPO's Universe Management Function, which provides these cases to the appropriate operation. Depending on the timing, living quarter type, and TEA designation, RPO may initiate one or more mailings to these new addresses through FPD to encourage self-response.

7 All field operations (GQ, UL, ETL, UE, and NRFU) include quality control (QC) functions. For GQ, the RPO Quality Control Management function creates and sends a sample of the field enumeration cases to ACO staff, who conduct telephone reinterviews for this sample set of cases to confirm that a GQ enumerator visited the site and that the total population count is correct.

For UL, the RPO Quality Control Management function selects a sample set of basic collection units (BCUs) for relisting. The QC Listing Results are sent back to the RPO Quality Control Management function for further processing. RPO does not send any changes resulting from UL listing to GEOP until the lister has passed the QC check. Further, if the QC activities result in a hard fail, BCUs already worked may require relisting. RPO includes this rework in subsequent UL production workloads.

QC methods for ETL and UE will be performed primarily in the field, tailored to meet the circumstances of these unique paper-based operations.

NRFU includes multiple methods for ensuring high-quality data collection. Several of these are integrated into the staff management activities. In addition, samples of field followup cases are selected for reinterview (RI), a process whereby the response data are collected again and compared with the original collected data. The RPO Quality Control Management function creates the RI workload and sends it to the NRFU operation. The RI cases are handled by NRFU field staff. The RI results are sent to the RPO Quality Control Management function, which performs an automated comparison of the RI data against the original data. Anomalies are sent back to NRFU, where additional research is conducted to determine how these cases should be handled. The results of this review (adjudication outcomes) are sent back to the RPO Quality Control Management function. In some cases, the adjudication requires that prior cases performed by the enumerator at fault be reworked. RPO puts these cases back into the NRFU workload as appropriate.

8 NRFU, UE, UL, ETL, and parts of the GQ operation are performed in the field. Several operations provide the support for these field data collection activities. The Field Infrastructure

operation (FLDI) recruits, hires, onboards, and trains the staff needed to conduct these operations and also operates the field offices during production. The Decennial Logistics Management operation (DLM) provides the space and logistics support (e.g., supplies, kits, etc.) for the offices and the field staff. The Decennial Service Center operation (DSC) provides technical support for field and field office staff. Finally, the IT Infrastructure operation (ITIN) provides the hardware and software used by the field staff and field offices.

Post-Data Collection

9 Once data collection is complete, additional processing occurs to prepare the counts for use in apportionment and the data used by the Data Products and Dissemination operation (DPD) to create data products for redistricting and other purposes. The RPO Decennial Response Processing function handles this post-data collection processing, which includes multiple activities:

- Supplementing response data with administrative records for those cases that had been identified as AdRec Occupied but for which a nonresponse followup attempt was unsuccessful and no subsequent self-response was received.
- Determining the final enumeration universe by reconciling or applying final address and block data from the GDP component of GEOP.
- Determining the returns of record for situations where multiple responses have been received for the same housing unit.
- Performing count and status imputations.
- Performing consistency editing and characteristic allocation supplemented with administrative records data.
- Applying tabulation geography.
- Performing disclosure avoidance (Note: This is done by RPO for Island Areas Censuses data only. Disclosure avoidance for stateside/PR data is handled by DPD).

Similar processing occurs for responses from group quarters. Responses collected through the EAE operation may require slightly different activities.

Through these processing activities, the RPO Decennial Response Processing function creates multiple files for Stateside/PR response data, including the Decennial Response File (DRF), the Census Unedited File (CUF), and the Census Edited File (CEF). RPO also creates an Island Areas CUF (IA-CUF), Island Areas CEF (IA-CEF), and Island Areas Microdata Detail Files (IA-

MDF) for the Island Areas Censuses (IAC) response data. Each of these files is reviewed within the Census Bureau before the data are sent to the next stage of processing: Some of these reviews are done as part of the CRO. The CUF, the CEF, the IA-CUF, and the IA-MDF are sent to DPD via the Census Data Lake (CDL). DPD uses these files as inputs for data products creation and also creates the Stateside/PR MDFs using the CEF as input. RPO also sends data collected as part of EAE back to the EAE operation for further analysis.

3. Update Enumerate Operation (UE) Detailed Process Description

Figure 3 is a top-level Business Process Model (BPM) showing the Level 1 activity areas within the UE operation. BPMs for the 2020 Census follow industry-standard Business Process Model and Notation (BPMN). An explanation of how to read the BPMN notations and a full-sized copy of all of the BPMN diagrams for this operation are provided under separate cover.

This top-level BPM serves as the Context Model for the Update Enumerate Operation (UE). A BPMN Context Model displays the high-level activities within the operation and relationships between them, whereas the IDEF0 Context Diagram shown earlier depicts the boundaries of the operation or activity and the interfaces between the operation or activity and other operations and activities with which it is associated.

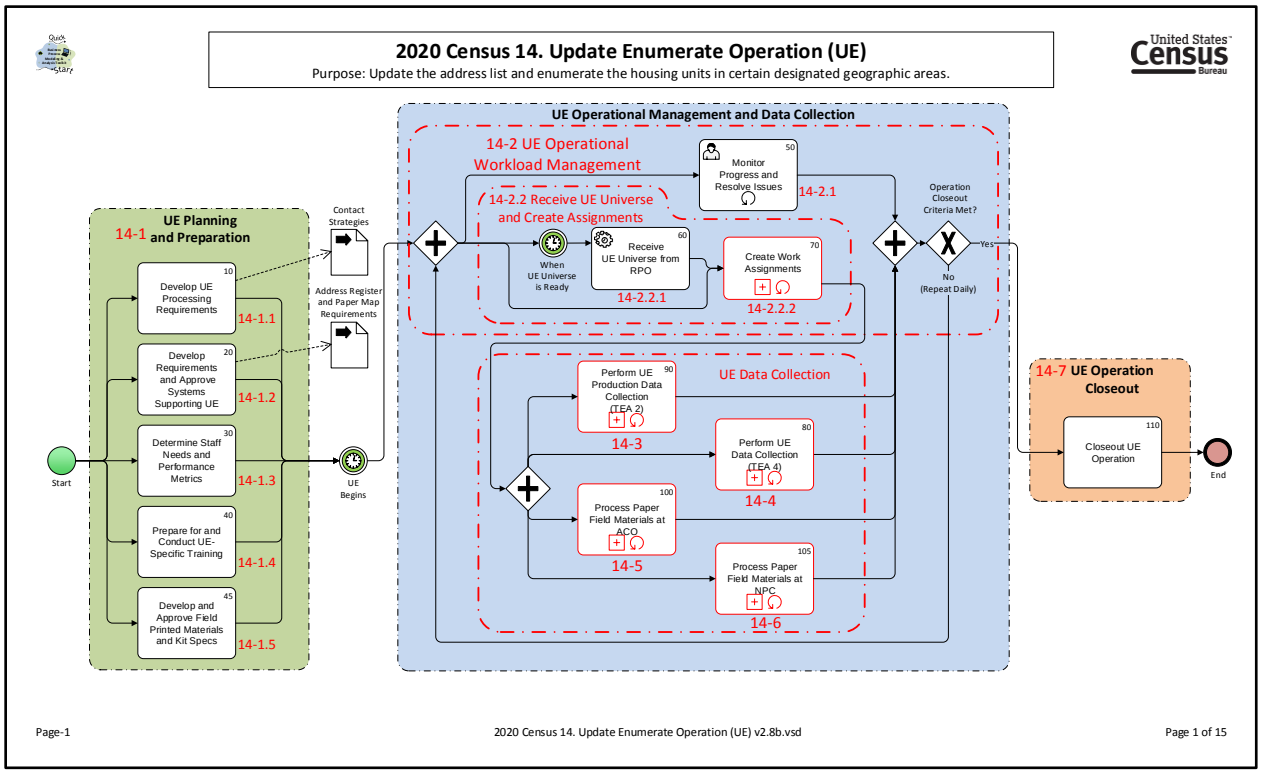

Figure 3: UE Operation Context Model

The UE operation is subdivided into the following Activity Areas.

- UE Planning and Preparation [UE 14-1].
- UE Operational Workload Management [UE 14-2].

- UE Production Data Collection (TEA 2) [UE 14-3].
- UE Data Collection (TEA 4) [UE 14-4].
- Paper Field Materials at ACO [UE 14-5].
- Paper Field Materials at NPC [UE 14-6].
- UE Operation Closeout [UE 14-7].

The business processes for each of these Level 1 activity areas are discussed along with their inputs and outputs in the following subsections.

3.1 UE Planning and Preparation [UE 14-1]

Figure 4 shows the BPM for the UE Planning and Preparation [UE 14-1] activity area (area within the gray rounded rectangle) and its constituent activities within the overall context of the UE operation.

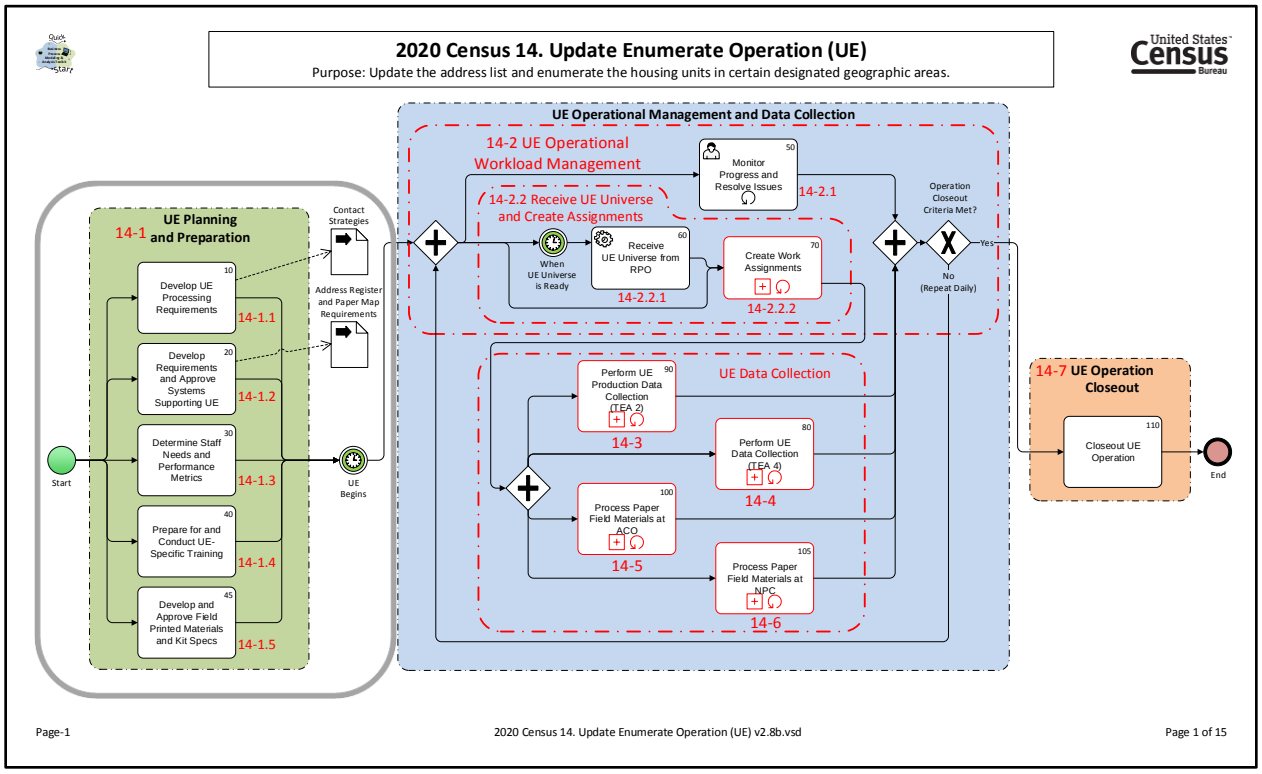

Figure 4: UE Planning and Preparation [UE 14-1] Constituent Activities

The UE Planning and Preparation activity area is subdivided into the following operational subactivities.

- UE Planning and Preparation [UE 14-1].
    - Develop UE Processing Requirements [UE 14-1.1].
    - Develop Requirements and Approve Systems Supporting UE [UE 14-1.2].
    - Determine Staff Needs and Performance Metrics [UE 14-1.3].
    - Prepare for and Conduct UE-Specific Training [UE 14-1.4].
    - Develop and Approve Field Printed Materials and Kit Specs [14-1.5].

Subsequent sections describe the UE Planning and Preparation operational subactivities in detail.

3.1.1 Develop UE Processing Requirements [UE 14-1.1]

The UE Integrated Project Team (IPT) develops the contact strategies and associated business rules used for conducting UE, such as:

- Maximum number of personal visit attempts for each case.
- Defined rules for when telephone interviews can be conducted.
- Defined rules for when each case will become eligible for proxy enumeration.
- Defined quality control measures.

3.1.2 Develop Requirements and Approve Systems Supporting UE [UE 14-1.2]

UE will work with several stakeholders, including the Decennial Census Management Division, Decennial Information Technology Division, Population Division, Decennial Statistical Studies Division (DSSD), Geography Division (GEO), and Field Division (FLD) at the Census Bureau to develop and review requirements for the systems that support UE operations. System requirements are developed through user stories and specifications. The Content and Forms Design (CFD) operation maintains the requirements for printed questionnaires and enumeration materials. GEO works to develop and review requirements for address registers, paper maps, and spatial data.

3.1.3 Determine Staff Needs and Performance Metrics [UE 14-1.3]

The “Determine Staff Needs and Performance Metrics” operational subactivity is subdivided into the following activities.

- Determine Staff Needs and Performance Metrics [UE 14-1.3].

- Determine Estimated UE Operational Workload by Geographic Area [UE 14-1.3.1].
- Define UE Operational Performance Metrics and Targets [UE 14-1.3.2].

Subsequent sections describe the Determine Staff Needs and Performance Metrics operational subactivities in detail.

3.1.3.1 Determine Estimated UE Operational Workload by Geographic Area [UE 14-1.3.1]

UE will estimate the UE operational workload by geographic area to enable FLDI to determine staffing needs in all locations and plan recruiting efforts.

Geographic area estimates will be on a national, regional census center (RCC), area census office (ACO), and tract level. UE will estimate the workload based on input from stakeholders, results from previous censuses and census tests, identified self-response rates, and geographic characteristics. FLDI will use the UE contact strategies and business rules to develop staffing models and recruiting requirements.

3.1.3.2 Define UE Operational Performance Metrics and Targets [UE 14-1.3.2]

Metrics and targets are defined at different administrative levels of the UE operation. Through Unified Tracking System (UTS) reports, headquarters (HQ) staff will measure the performance of the RCCs for progress and cost of the operation in their regions. Through Enterprise Censuses and Surveys Enabling Field-Operational Control System (ECaSE FLD-OCS) progress tracking, the RCCs will measure the performance of the ACOs in their region, the Census Field Managers (CFMs) measure the performance of their Census Field Supervisors (CFSs), and CFSs measure the status and progress of the enumerators.

3.1.4 Prepare for and Conduct UE-Specific Training [UE 14-1.4]

The “Prepare for and Conduct UE-Specific Training” operational subactivity is subdivided into the following constituent activities.

- Prepare for and Conduct UE-Specific Training [UE 14-1.4].
    - Prepare for UE-Specific Training [UE 14-1.4.1].
    - Conduct UE-Specific Training [UE 314-1.4.2].

Subsequent sections describe the Prepare for and Conduct UE-Specific Training operational subactivities in detail.

3.1.4.1 Prepare for UE-Specific Training [UE 14-1.4.1]

The "Prepare for UE-Specific Training" operational subactivity is subdivided into the following constituent activities as described below.

- Prepare for UE-Specific Training [UE 14-1.4.1].
    - Provide UE-Specific Training Content and Requirements [UE 14-1.4.1.1].
    - Review and Approve UE-Specific Training [UE 14-1.4.1.2].

The subsequent sections describe the Prepare for UE-Specific Training operational subactivities in detail.

Provide UE-Specific Training Content and Requirements [UE 14-1.4.1.1]

UE will provide training content and requirements to FLDI for the UE-specific training of field staff such as:

- Enumerators.
- Census Field Supervisors.
- Census Field Managers.
- Area Census Office Managers.

FLDI will use these requirements and content to develop UE-specific classroom training materials. FLDI will also develop and approve the general field staff training that is provided in conjunction with the UE-specific training.

Training materials will be modified to support the differences for Remote Alaska.

Review and Approve UE-Specific Training [UE 14-1.4.1.2]

UE will review and approve the training developed by FLDI operations based on the requirements and content provided by UE.

3.1.4.2 Conduct UE-Specific Training [UE 14-1.4.2]

FLDI will establish nationwide training dates to ensure the staff are trained before UE begins. FLDI will seek free public space to deliver classroom trainings. In accordance with the training schedule and using the training materials developed by FLD and printed by DLM, UE will conduct training that includes classroom instruction for:

- Using address registers to verify and update address information.

- Using paper questionnaires to record the status of assigned addresses and, if occupied, enumerating those households.
- CFSs to support and monitor enumerators and complete the workload.
- CFMs to support and monitor CFSs as they support the enumerators.

CFSs will first receive enumerator training as part of their training. They will then be responsible for administering that training to enumerators.

3.1.5 Develop and Approve Field Printed Materials and Kit Specs [UE 14-1.5]

UE will provide requirements for field printed materials to CFD. CFD will develop the materials based on the requirements received from UE. After completing the development of field printed materials, CFD will deliver the print files to UE for approval before sending them to FPD or DLM for printing.

UE will provide CFD with the content of the following field enumeration materials:

- **UE Questionnaire –** The questionnaire used by enumerators to collect information and demographic data about UE addresses.
- **UE Continuation Questionnaire –** The questionnaire used by enumerators to collect complete person data for large households, in conjunction with the UE Questionnaire.
- **Confidentiality Notice** – A form enumerators give to respondents during an interview to help the respondent understand the Census Confidentiality policy.
- **Information Sheet** – A form enumerators provide to respondents that contains lists with choices for the questions on household residency, relationship to the reference person, and race and ethnicities.
- **Language Identification Card** – For an enumerator to show the respondent during an interview attempt when a language barrier is evident. The card lists several languages and is a tool to allow the enumerator to identify the language that the respondent speaks. For each language, a short paragraph in that language asks if there is an English-speaking person available to help them complete the interview.
- **Record of Visit (ROV)** – A form for use by enumerators when they cannot find anyone at home at an occupied housing unit. The ROV informs occupants that an enumerator attempted contact and will return to gather census data. It also provides occupants with contact information for the enumerator and/or the CFS if they have questions or are willing to be interviewed by telephone.

CFD provides the print files for field enumeration material to FPD or DLM after UE specifies the kit requirements.

UE will provide DLM with the requirements for assembling the materials for the following types of kits:

- **UE Instructor Kit** – includes forms such as for a Daily Pay and Work Record, Decennial Applicant, Personnel, and Payroll System (DAPPS) Update, and a Thank You Letter for donated space as well as supplies such as a 2020 Census bag, name cards, pens, and a power supply kit.
- **UE Census Field Supervisor (CFS) Kit** – includes forms such as for a Special Sworn Status, documents such as the CFS Handbook, the CFS Training Participant Guide, the Enumerator Training Instructor Guide, and an accident reporting kit.
- **UE Enumerator Kit** – includes the Official Business sign, ROVs, paper questionnaires, Information Sheets, Language Identification Cards, a 2020 Census bag, pens, a clipboard, and documents such as the Enumerator Handbook and the Enumerator Training Participant Guide.

The Field Division will develop kit specs for the UE operation, which will be reviewed and approved and then sent to DLM for assembly.

3.2 UE Operational Workload Management [UE 14-2]

Figure 5 shows the BPM for the UE Operational Workload Management [UE 14-2] activity area (area within the gray rounded rectangle) and its constituent activities within the overall context of the UE operation.

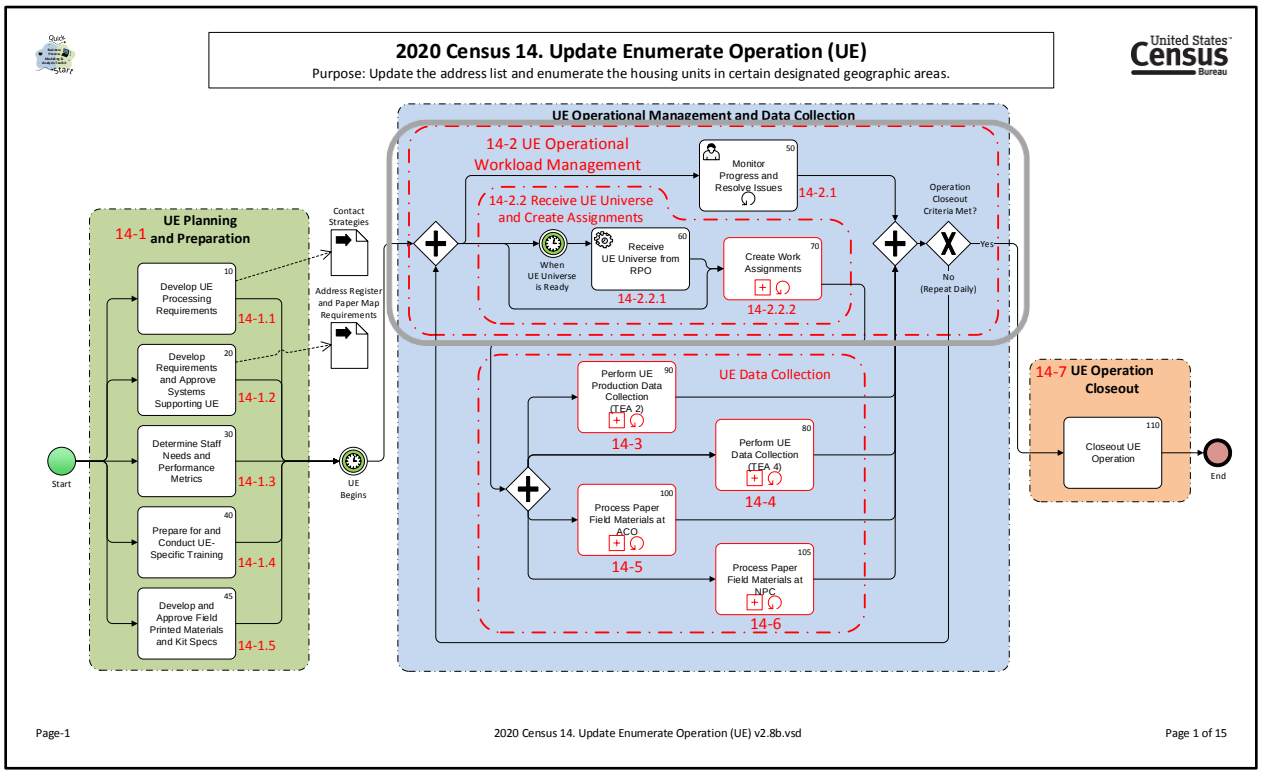

Figure 5: UE Operational Workload Management [UE 14-2] Constituent Activities

The UE Operational Workload Management activity area is subdivided into the following operational subactivities.

- UE Operational Workload Management [UE 14-2].
  - Monitor Progress and Resolve Issues [UE 14-2.1].
  - Receive and Process UE Universe and Updates [UE 14-2.2].

Subsequent sections describe the UE Operational Workload Management operational subactivities in detail.

3.2.1 Monitor Progress and Resolve Issues [UE 14-2.1]

Monitoring progress and resolving issues includes the following subactivities:

- HQ, RCC, and ACO review of cost, progress, and status. This review includes comparison of current versus projected cost, progress, and status; identifying offices that require followup; and inquiry through UTS and ECaSE FLD-OCS reporting to find

operational outliers, identify areas of concern, and compare progress toward defined performance metrics, such as:

  - CFM review of noncompletion conditions, such as a language or hearing barrier, respondent refusal, and enumerator identified dangerous situation. For respondent refusals and enumerator identified dangerous situations, the CFM may determine that the best action is to send another enumerator to make an attempt or to close the case. Otherwise, the CFM will determine the best course of action to enumerate the household. If an enumerator does not exist in the ACO with that language capability, the CFM may work with Partnership to locate an interpreter.
  - CFS review of enumerators using ECaSE FLD-OCS alerts displayed on their mobile device (i.e., tablet). Alerts are generated when performance and conduct metrics are not being met by the enumerator. Alerts include performance and conduct indicators such as too many refusals and potential overcharge of mileage.

- Resolve staffing needs and manage employee performance and conduct, including terminating poor performers, and identifying quality enumerators and assigning them to enumerate difficult cases.

UE will be providing paradata and UE operational workload information to the Program Management operation for it to use in managing performance across the 2020 Census.

3.2.2 Receive UE Universe and Create Assignments [UE 14-2.2]

The “Receive UE Universe and Create Assignments” operational subactivity is subdivided into the following constituent activities.

- Receive UE Universe and Create Assignments [UE 14-2.2]
  - Receive UE Universe from RPO [UE 14-2.2.1]
  - Create Work Assignments [UE 14-2.2.2]

A detailed view of the constituent activities that make up the “Receive UE Universe and Create Assignments” operational subactivity is given in Figure 6 below.

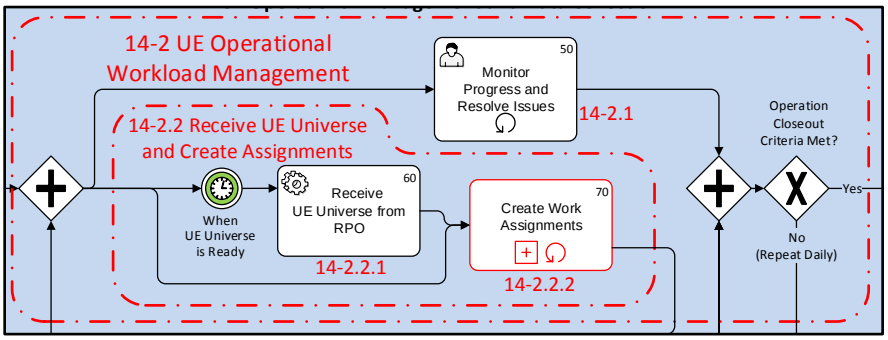

Figure 6: Receive UE Universe and Create Assignments

Subsequent sections describe the "Receive UE Universe and Create Assignments" operational subactivities in detail.

3.2.2.1 Receive UE Universe from RPO [UE 14-2.2.1]

The enumeration universe is the complete set of addresses for living quarters (LQs) that are to be enumerated for the 2020 Census. The UE universe is a subset of the enumeration universe. It comprises the set of addresses for LQs that are HUs in the UE TEA (TEA 2). It comprises the set of addresses for HUs, GQs, and TLs in the RA TEA (TEA 4).

The initial UE Universe is created by RPO prior to the start of the operation. RPO will add new cases that are identified during UE work to the UE universe including:

- HUs added to the address list during UE production and RA.
- GQs and TLs identified during Advance Contact for RA and RA fieldwork.

3.2.2.2 Create Work Assignments [UE 14-2.2.2]

A detailed view of the constituent activities that make up the "Create Work Assignments" operational subactivity is given in Figure 7 below.

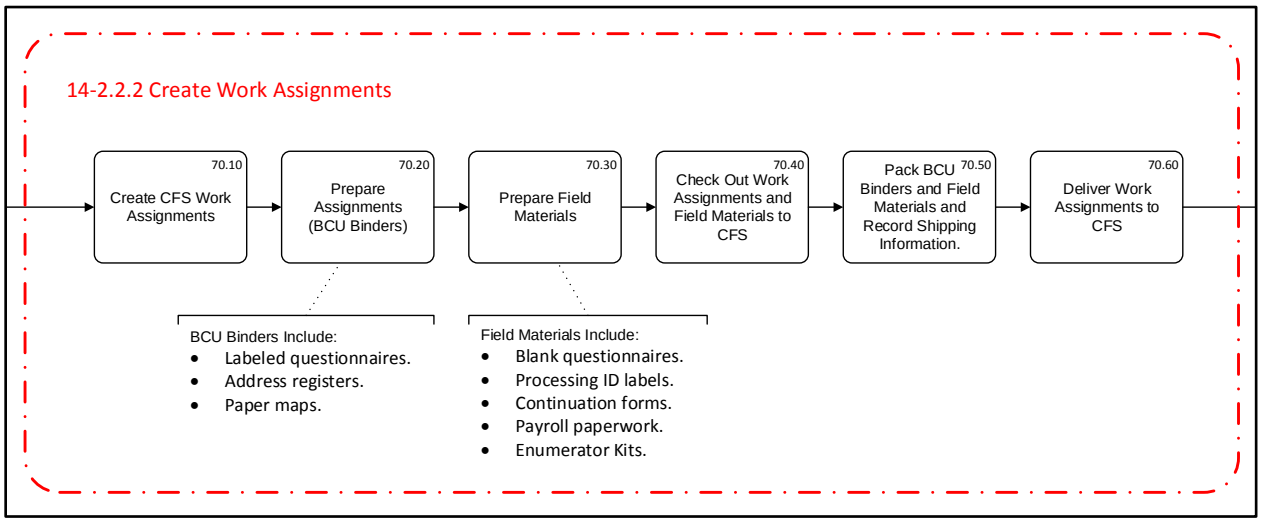

Figure 7: Create Work Assignments

In the process of creating work assignments, the ACO staff collects the appropriate binders and other materials. The work assignments are checked out to a CFS in ECaSE-FLD-OCS in preparation for shipment to the CFS. The ACO staff verifies the following materials for the assignment:

Address Registers

ACO staff will review the address binders that were printed and assembled by DLM. Major components of the binders include the following:

- Cover Page/Quality Assurance Review Page.
- Special Notice Page (provides instructions/reminders).
- Address Listing Pages.
- Add Pages.
- Map envelopes with BCU map sets.

Map Envelopes

The ACOs will review the map envelopes and associated labels that were printed and assembled by NPC. The map envelope is located in the back of the address binder. If any maps or labels are missing or need to be reprinted, the ACO staff will print labels for the map envelopes, affix them accordingly, and insert the reprinted map sets into the envelopes.

Questionnaires

The ACOs print labels for the questionnaires using ECaSE-FLD-OCS. The staff affixes the ID labels to the questionnaire as predesignated on the address page of the address register. The clerks sort the labeled questionnaires by ID in order of the listing pages and groups them with the correct binder for delivery to the Census Field Supervisors (CFSs). Processing ID labels and additional unlabeled questionnaires will be included for infield adds.

Assignment Management

Assignments are created at the BCU level and are manually grouped and assigned to a CFS. When a BCU is assigned to a CFS, the ACO staff will key the assignment information into ECaSE FLD-OCS. ACO staff can make changes to assignments, including reassignments, on a flow basis to accommodate workload or special needs, such as special language support. The CFS provides assignments and supplies to the enumerators.

3.3 UE Production Data Collection (TEA 2) [UE 14-3]

Figure 8 shows the BPM for the UE Production Data Collection (TEA 2) [UE 14-3] activity area (area within the gray rounded rectangle) within the overall context of the UE operation.

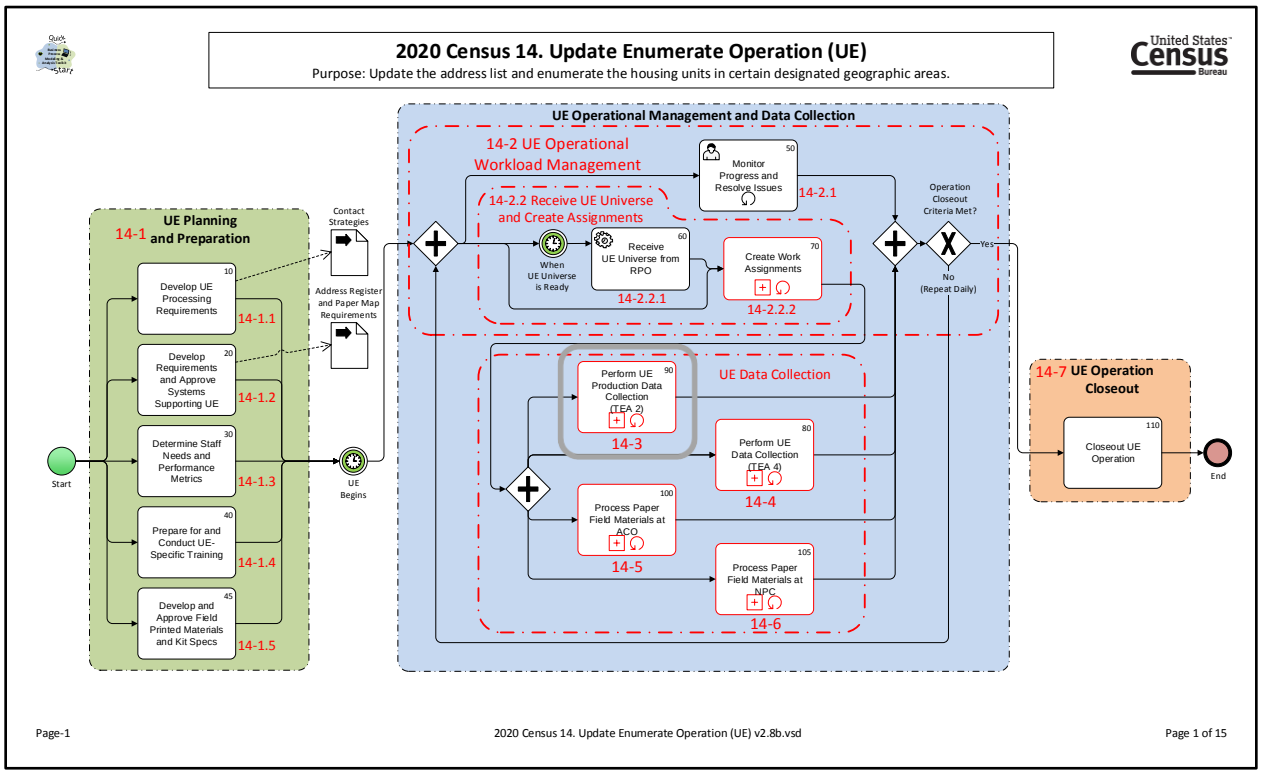

Figure 8: UE Production Data Collection (TEA 2) [UE 14-3]

As shown in Figure 9, the UE Production Data Collection (TEA 2) activity area is subdivided into the following operational subactivities.

- UE Production Data Collection (TEA 2) [UE 14-3].
  - Receive UE TEA 2 Production Work Assignment [UE 14-3.1].
  - Perform UE TEA 2 Production Canvassing [UE 14-3.2].
  - Enumerate Housing Unit in TEA 2 [UE 14-3.3].
  - Record Time and Expense Daily for TEA 2 Work [UE 14-3.4].
  - Review TEA 2 Completed Work and Time and Expense Records [UE 14-3.5].
  - Deliver TEA 2 Completed Work and Time and Expense Records [UE 14-3.6].

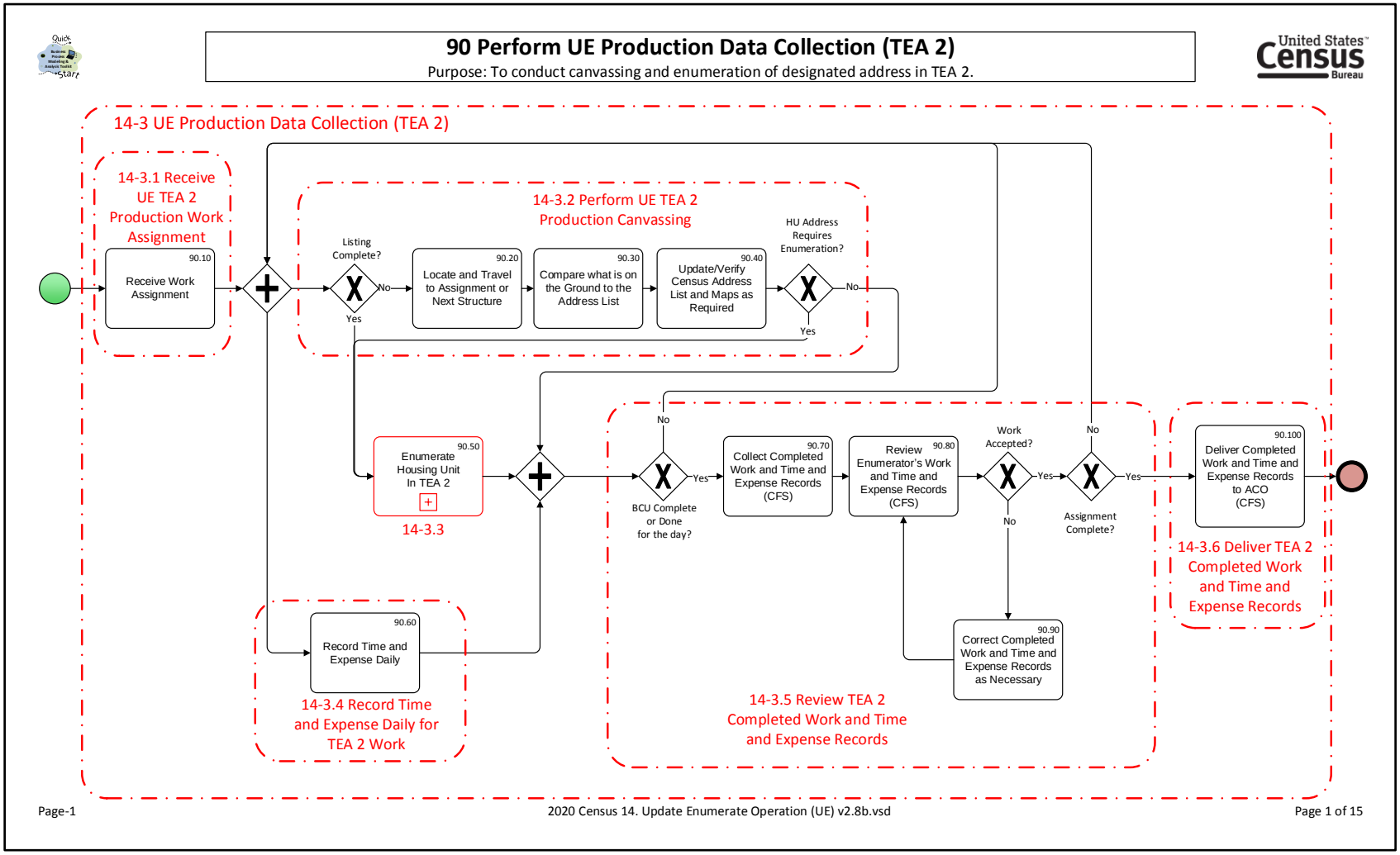

Figure 9: UE Production Data Collection (TEA 2) [UE 14-3] Constituent Activities

Subsequent sections describe the UE Production Data Collection (TEA 2) operational subactivities in detail.

3.3.1 Receive UE TEA 2 Production Work Assignment [UE 14-3.1]

Work assignments are sent from the ACO and are received by the CFS. The CFS distributes the work assignments to the enumerators he or she is supervising.

3.3.2 Perform UE TEA 2 Production Canvassing [UE 14-3.2]

A detailed view of the constituent activities that make up the "Perform UE TEA 2 Production Canvassing" operational subactivity is given in Figure 10 below.

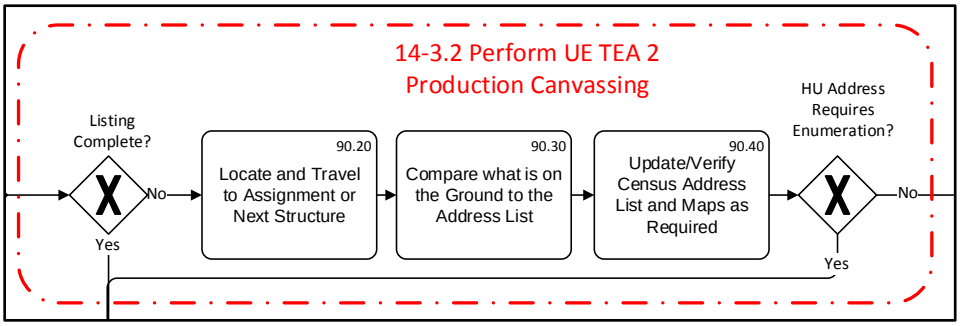

Figure 10: Perform UE TEA 2 Production Canvassing

To maintain quality, UE enumerators will work in pairs and canvass their assigned BCUs to update the address lists and corresponding maps as needed. Enumerators visit every place where people could live or stay, comparing what they see on the ground to the existing census address list and either adding, updating, or verifying the address and location information. At each structure they encounter on the ground, the enumerators identify the location address based on

visual observation or by talking to a knowledgeable person. Enumerators then look for the same address in the address list for the BCU. In general, the field staff complete the following tasks:

- If the address is on the address list, they will confirm the existing information and provide updates as necessary.
- If the address is not on the address list, they will add it.
- If there is a corresponding mapspot on the paper map, they will verify the location and correct as necessary.
- If there is not a corresponding mapspot on the paper map, they will add it.
- If addresses remain on the list that they did not encounter during their ground listing, they will identify the address as a delete/does not exist in the block.

3.3.3 Enumerate Housing Unit in TEA 2 [UE 14-3.3]

The Enumerate Housing Unit in TEA 2 activity area is subdivided into the following operational subactivities.

- Enumerate Housing Unit in TEA 2 [UE 14-3.3].
    - Attempt Interview [UE 14-3.3.1].
    - Enumerate Housing Unit [UE 14-3.3.2].
    - Enumerate Housing Unit Via Proxy Interview [UE 14-3.3.3].
    - Verify Housing Unit Vacancy Via Proxy [UE 14-3.3.4].

To maintain quality, UE Enumerators will work in pairs, and enumerate their assigned HUs to collect the required demographic information and unit status. A detailed view of the constituent activities that make up the “Enumerate Housing Unit in TEA 2” operational subactivity is given in Figure 11 below.

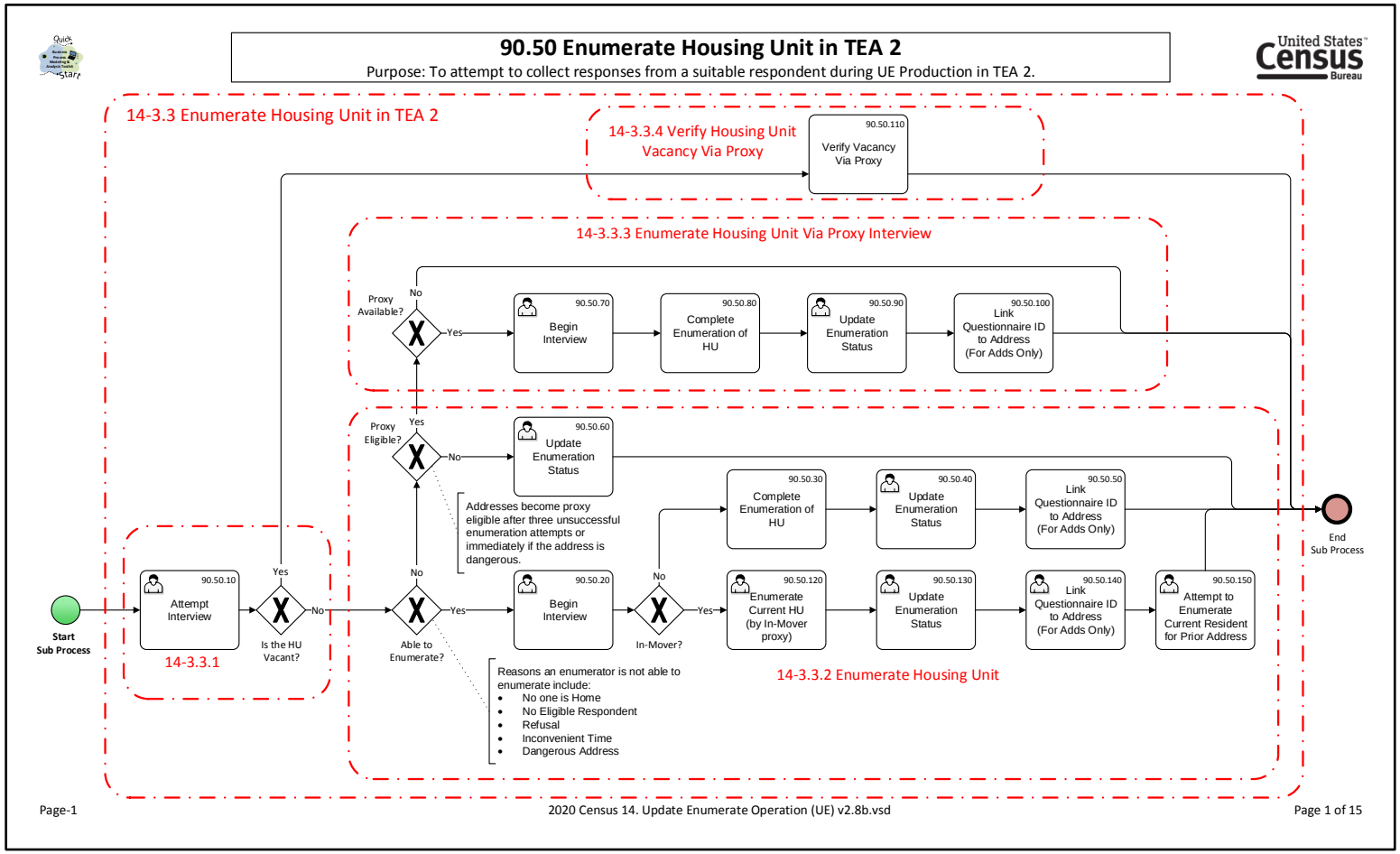

Figure 11: Enumerate Housing Unit in TEA 2

Subsequent sections describe the Enumerate Housing Unit in TEA 2 operational subactivities in detail.

3.3.3.1 Attempt Interview [UE 14-3.3.1]

A detailed view of the constituent activities that make up the "Attempt Interview" operational subactivity is given in Figure 12 below.

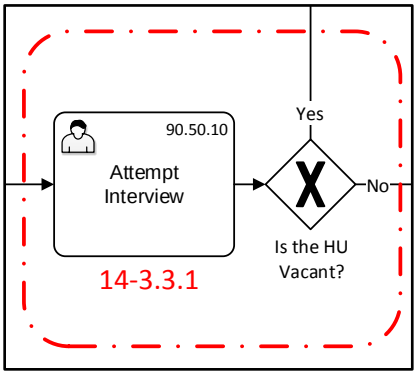

Figure 12: Attempt Interview

Enumerators must talk with a "knowledgeable respondent," age 15 or older, to obtain the required information for the unit. For occupied units, a knowledgeable respondent is generally a member of the household. Enumerators generally attempt to contact units that appear occupied up to six times.

If an enumerator is unable to conduct an interview with the household because of a refusal, he or she discusses this with the CFS. The CFS may decide to reassign the case to another enumerator or send it to the ACO to be accepted. If the CFS feels that a visit to the household by another enumerator will not be successful, he or she may instruct the enumerator to attempt to locate a proxy respondent.

When a language barrier prevents the enumerator from conducting an interview, enumerators try to find an interpreter within the household. If a household interpreter cannot be obtained, enumerators code the case as a noninterview and indicate the language required in the notes section of the questionnaire. Enumerators can use a language flashcard to identify the required language if necessary.

If a household member is available to act as an interpreter, or if a nonhousehold member that is approved by the respondent is available, no special actions are needed. If neither is available, the enumerator will report the situation to the CFS. If there is another enumerator who speaks the language, the CFS will reassign the case to that enumerator. If no other enumerator is available, the CFS contacts the ACO to see if there is an enumerator who can act as an interpreter. If not,

the ACO may hire an external interpreter. The interpreter is sworn in and accompanies the original enumerator to the address.

3.3.3.2 Enumerate Housing Unit [UE 14-3.3.2]

A detailed view of the constituent activities that make up the "Enumerate Housing Unit" operational subactivity is given in Figure 13 below.

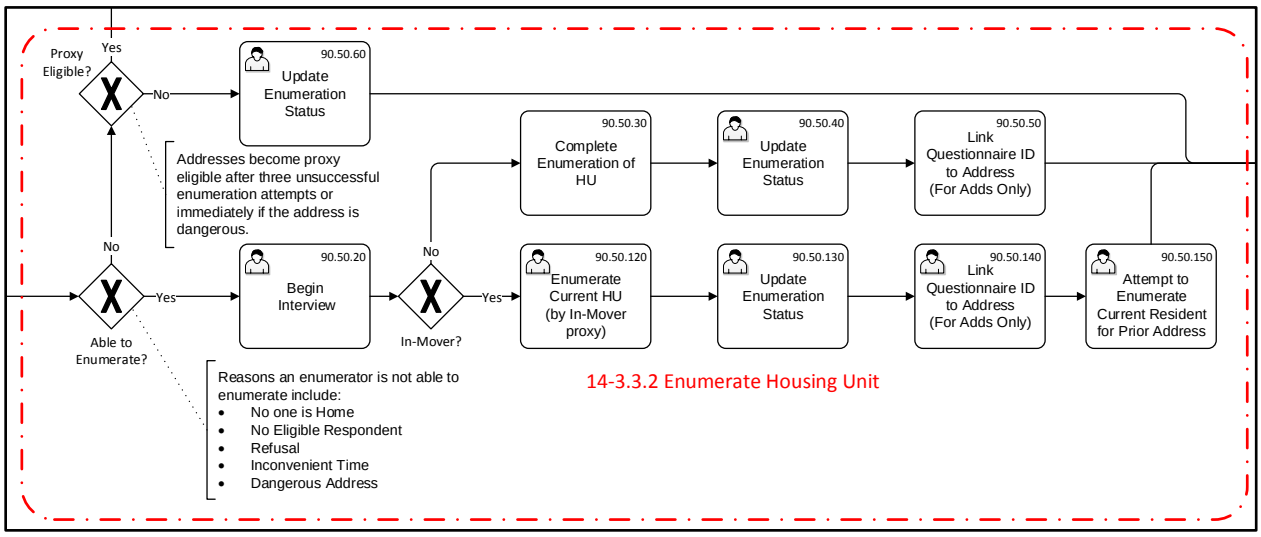

Figure 13: Enumerate Housing Unit

During the course of conducting the data collection phase, the enumerator can anticipate facing the following situations:

Units that were occupied on Census Day

Using an eligible respondent, the enumerator conducts an interview to collect response data about the household using a paper questionnaire.

Census Day households that had a Usual Home Elsewhere (UHE)

Using an eligible respondent, the enumerator conducts an interview to determine the status of the HU (vacation home, seasonal home, etc.) and completes a questionnaire, as appropriate, following field procedures as described in the UE Enumerator Manual. If the respondent indicates that he or she has not completed a questionnaire for his or her primary residence, then the enumerator will complete a questionnaire about the respondent's household for his or her Census Day address. If the respondent indicates that he or she already completed a questionnaire for his or her primary residence, then the enumerator does not complete a questionnaire for the primary residence, and updates the address information in the binder.

Inmovers (respondents who moved into the UE address after Census Day)

Using a knowledgeable respondent, the enumerator completes as much of the questionnaire for the HU as possible based on its Census Day status, whether it was occupied or vacant. Also, if the respondent indicates that he or she was not enumerated at their Census Day address, then the enumerator will collect information about the respondent's household for his or her Census Day address. If the respondent indicates that he or she already completed a questionnaire for his or her previous address, the enumerator thanks the respondent, ends the interview, and updates the address information in the binder.

Addresses with a 'Nonexistent' (Delete) Status on Census Day

If an enumerator is unable to locate an address in the Census block, then he or she classifies the address as Unable to Locate, which is one of the Delete reasons. Other addresses that do not qualify as HUs on Census Day include those that were demolished, burned out, nonresidential, uninhabitable, or duplicates of other listed addresses. Census Day addresses within mobile home parks on which no mobile home/trailer was situated on are coded as "empty mobile home/trailer site." This code does not delete the address from the MAF, but it ensures that the address is not counted in the census HU count.

Added Units

If during canvassing or recanvassing the enumerator discovers an HU that is not on the address list for the census and needs to be processed as an address, he or she follows appropriate field procedures to add the unit. The enumerator completes a questionnaire, recording an occupied or vacant status and enumerating if occupied, and updates the Address Listing page and the census map.

Not Able to Enumerate

If an eligible respondent is not available and the case is not yet eligible for proxy interview, the enumerator records the contact attempt on the questionnaire and will make another enumeration attempt later.

3.3.3.3 Enumerate Housing Unit Via Proxy Interview [UE 14-3.3.3]

A detailed view of the constituent activities that make up the "Enumerate Housing Unit Via Proxy Interview" operational subactivity is given in Figure 14 below.

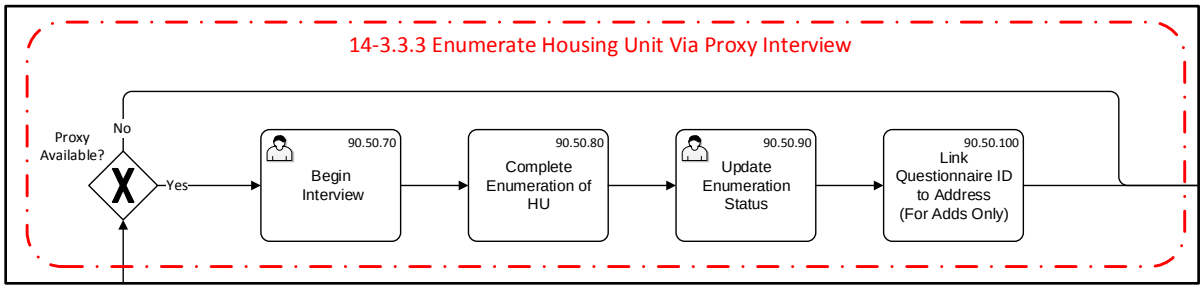

Figure 14: Enumerate Housing Unit Via Proxy Interview

If, after three personal attempts at varying times, the enumerator still does not find a household member at home, he or she interviews a neighbor, rental agent, building manager, or another knowledgeable individual (i.e. a "proxy" respondent). If possible, the enumerator obtains an entire interview. If not, he or she records the most complete information possible.

Enumerators may immediately seek a proxy respondent if:

- The enumerator learns that the household is on vacation and will not return prior to the completion of UE.
- The enumerator encounters a nonresident at the address, and:
    - The nonresident is a personal caretaker or family member.
    - The resident at the address is unavailable or unable to complete the enumeration.
    - The nonresident can provide the information needed on the resident(s) of the address.
- The address is inhabited by a dangerous individual, or it is not safe to enter the property.

3.3.3.4 Verify Housing Unit Vacancy Via Proxy [UE 14-3.3.4]

Refer to Figure 11 to see where "Verify Housing Unit Vacancy Via Proxy" operational activity fits. For units for which the status is obviously vacant, enumerators may verify the observed vacancy by interviewing a neighbor as a proxy respondent even at the first visit.

3.3.4 Record Time and Expense Daily for TEA 2 Work [UE 14-3.4]

Refer to Figure 9 to see where "Record Time and Expense Daily for TEA 2 Work" operational activity fits.

Using a mobile device, field staff (CFS and Enumerators) input hours, mileage, and expenditures, and submit for approval to their supervisor daily.

3.3.5 Review TEA 2 Completed Work and Time and Expense Records [UE 14-3.5]

A detailed view of the constituent activities that make up the "Review TEA 2 Completed Work and Time and Expense Records" operational subactivity is given in Figure 15 below.

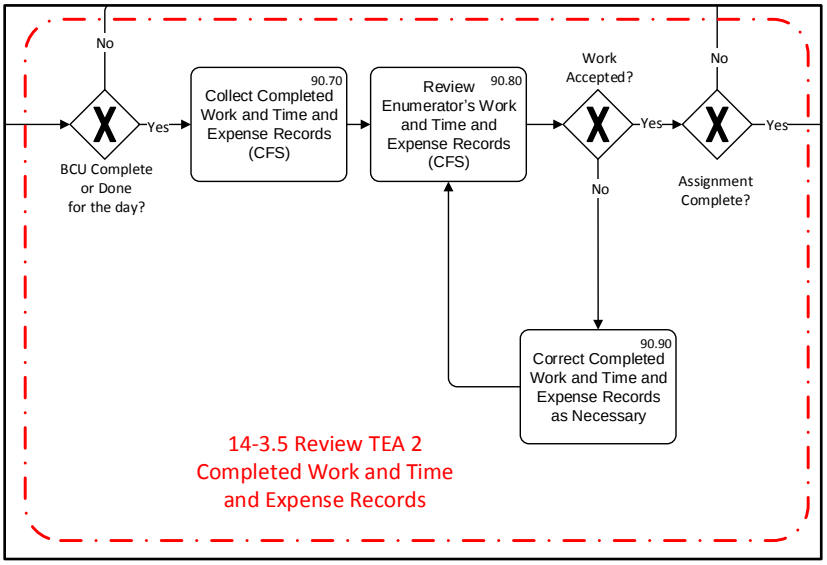

Figure 15: Review TEA 2 Completed Work and Time and Expense Records

As assignments are completed or at the end of each day, the CFS will review completed work and time and expense records.

CFS reviews completed work

The CFS uses the Quality Assurance Review Page, which is printed on the reverse side of the Address Register Cover Page to review completed enumerator work. The CFS reviews all completed questionnaires, address register pages, and maps to ensure the work was completed correctly and for any signs of potential falsification. After completing the review of the binder for a completed BCU, the CFS certifies the work is complete at the bottom of the Address Register Cover Page. If there are errors and rework is required, the CFS returns the work to the enumerators to make corrections. If falsification is identified, the CFS assigns the work to other staff to be reworked.

CFS reviews time and expense records

The CFS reviews each enumerator's time and expense record to ensure entries are complete and reasonable for the work completed. If the time and expense record contains errors, the CFS

returns the record to the enumerator for correction. The CFS certifies the time and expense records after review.

3.3.6 Deliver TEA 2 Completed Work and Time and Expense Records [UE 14-3.6]

Refer to Figure 9 to see where "Deliver TEA 2 Completed Work and Time and Expense Records" operational activity fits.

After review, the CFS delivers complete work to the ACO, where they are checked into the control system. The CFS and ACO will communicate to discuss shipping options. Time and expense records delivered automatically after being certified by the CFS.

3.4 UE Data Collection (TEA 4) [UE 14-4]

Figure 16 shows the BPM for the UE Data Collection (TEA 4) [UE 14-4] activity area (area within the gray rounded rectangle) within the overall context of the UE operation.

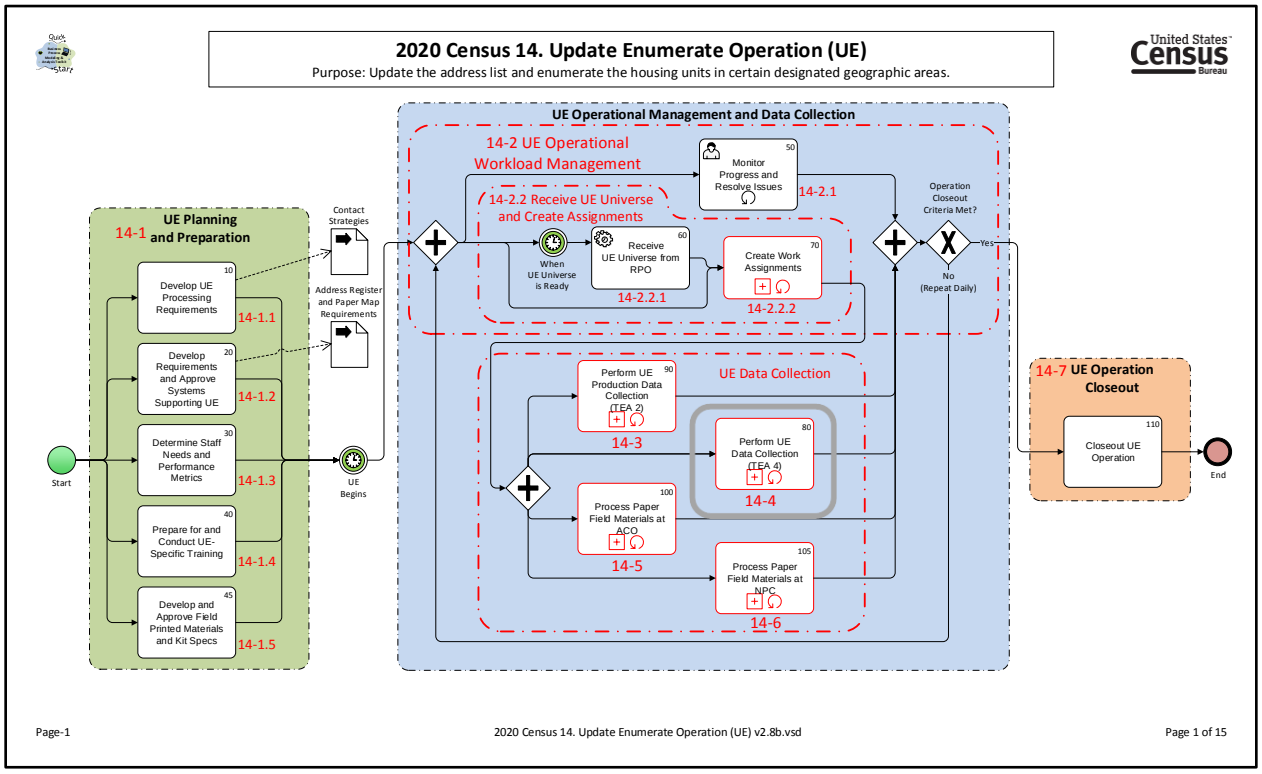

Figure 16: UE Data Collection (TEA 4) [UE 14-4]

As shown in Figure 17, below, the UE Data Collection (TEA 4) activity area is subdivided into the following operational subactivities.

- UE Data Collection (TEA 4) [UE 14-4].
  - Conduct Advance Contact for GQs and TLs (TEA 4) [UE 14-4.1].
  - Conduct GQ Enumeration – eResponse Transfer (TEA 4) [UE 14-4.2].
  - Conduct UE Production (TEA 4) [UE 14-4.3].

UE data collection in RA will use the same methodology and process as UE to the extent possible. UE will also be responsible for the enumeration of GQs and TLs in TEA 4. UE will use the systems and processes developed by GQE and ETL to the extent possible.

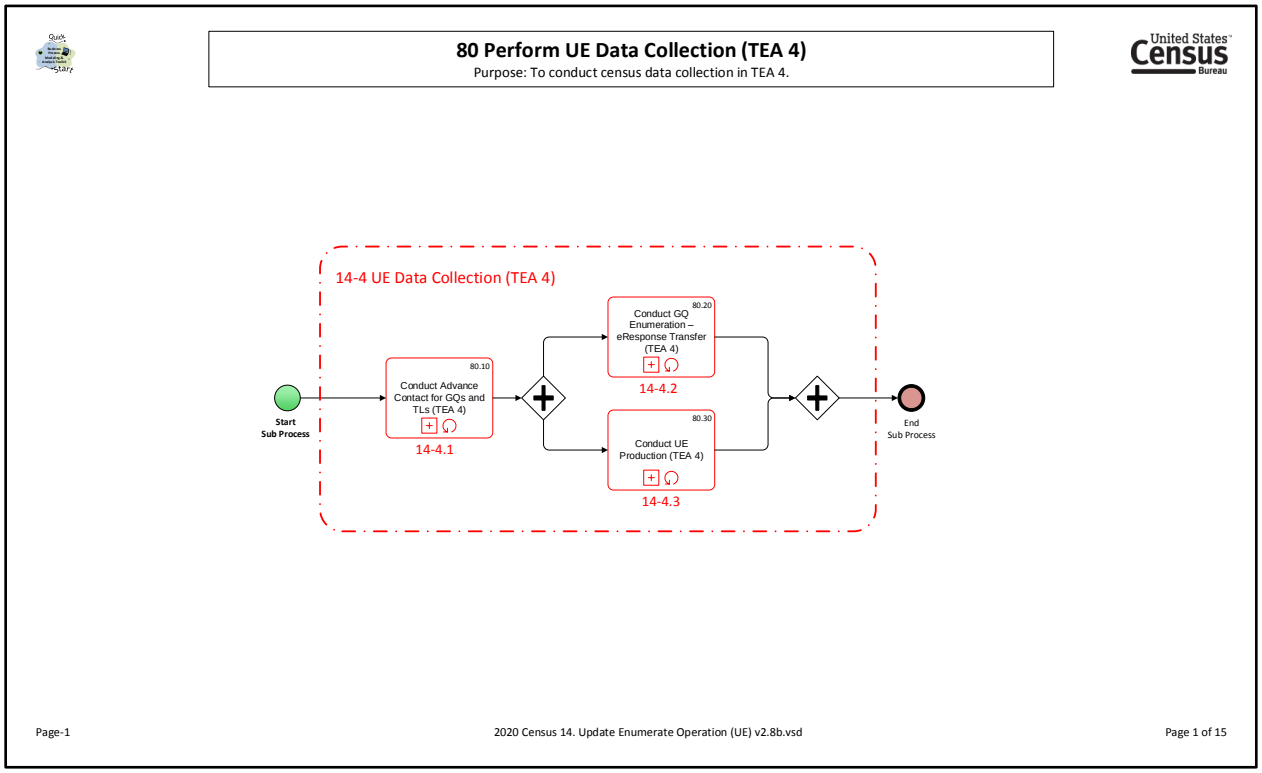

Figure 17: UE Data Collection (TEA 4) [UE 14-4] Constituent Activities

Subsequent sections describe the UE Data Collection (TEA 4) operational subactivities in detail.

3.4.1 Conduct Advance Contact for GQs and TLs (TEA 4) [UE 14-4.1]

The Conduct Advance Contact for GQs and TLs (TEA 4) activity area is subdivided into the following operational subactivities.

- Conduct Advance Contact for GQs and TLs (TEA 4) [UE 14-4.1].
    - Assign Advance Contact Work Assignments [UE 14-4.1.1].
    - Conduct GQ Advance Contact [UE 14-4.1.2].
    - Conduct TL Advance Contact [UE 14-4.1.3].

UE will use the systems and processes developed by GQE and ETL to conduct advance contact in RA to the extent possible.

A detailed view of the constituent activities that make up the “Conduct Advance Contact for GQs and TLs (TEA 4)” operational subactivity is given in Figure 18 below.

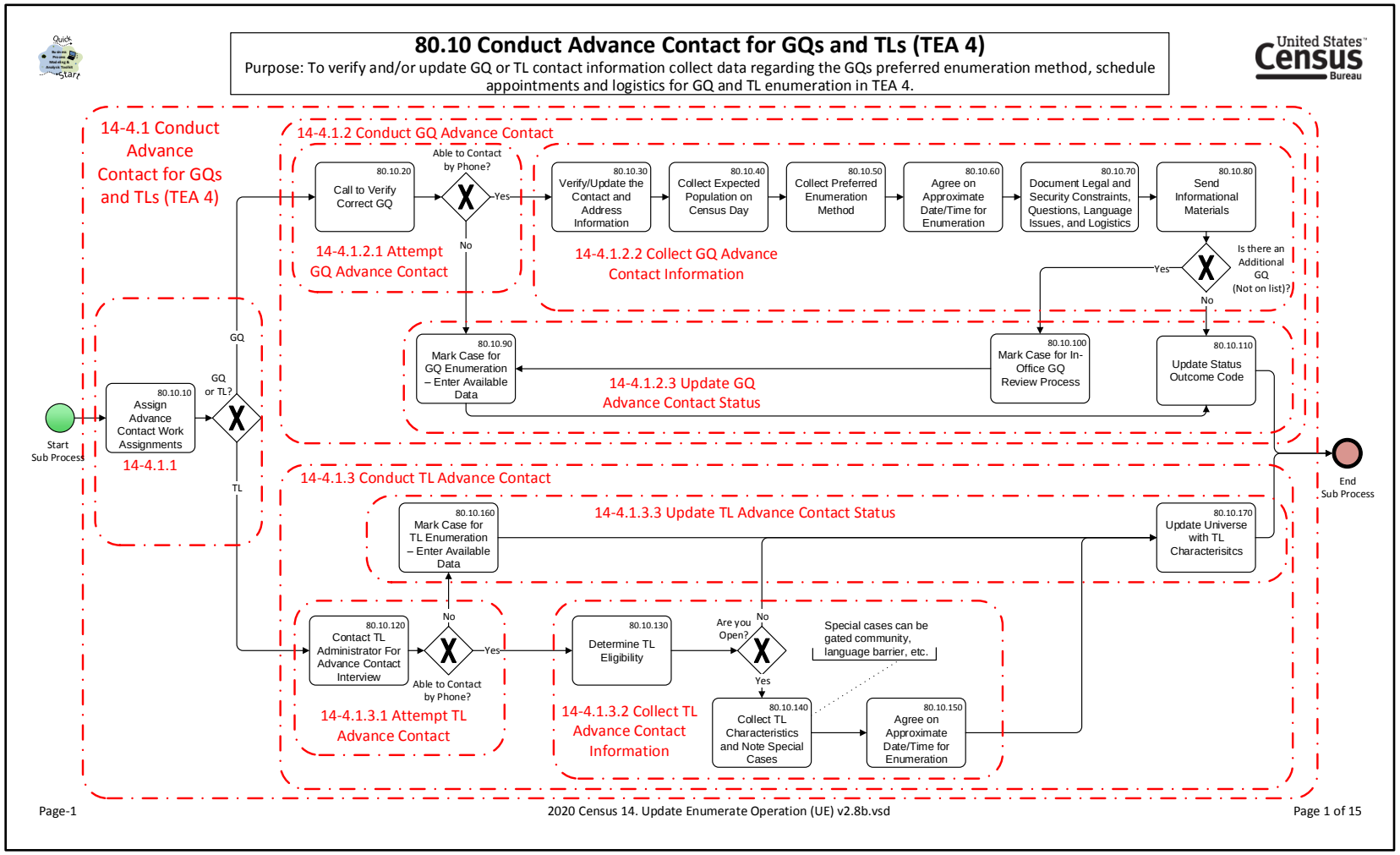

Figure 18: Conduct Advance Contact for GQs and TLs (TEA 4)

Subsequent sections describe the Conduct Advance Contact for GQs and TLs (TEA 4) operational subactivities in detail.

3.4.1.1 Assign Advance Contact Work Assignments [UE 14-4.1.1]

Advance contact work assignments, that may consist of GQs or TLs, are made to ACO staff.

3.4.1.2 Conduct GQ Advance Contact [UE 14-4.1.2]

The Conduct GQ Advance Contact (GQAC) activity area is subdivided into the following operational subactivities.

- Conduct GQ Advance Contact [UE 14-4.1.2].
  - Attempt GQ Advance Contact [UE 14-4.1.2.1].
  - Collect GQ Advance Contact Information [UE 14-4.1.2.2].
  - Update GQ Advance Contact Status [UE 14-4.1.2.3].

During GQAC, ACOs will call each GQ to verify the GQ contact and address information, determine the enumeration method, and address any questions related to the enumeration.

A detailed view of the constituent activities that make up the "Conduct GQ Advance Contact" operational subactivity is given in Figure 19 below.

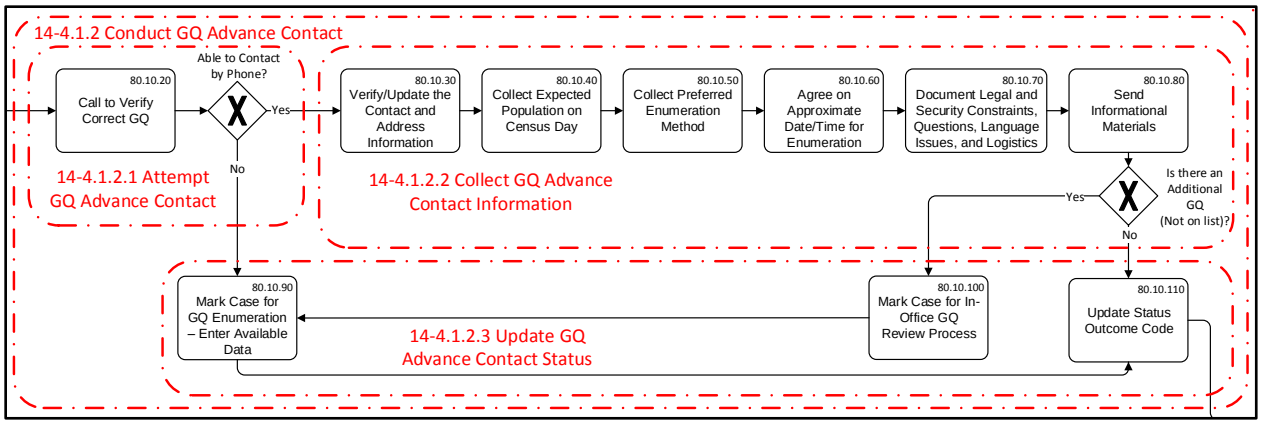

Figure 19: Conduct GQ Advance Contact

Subsequent sections describe the Conduct GQ Advance Contact operational subactivities in detail.

Attempt GQ Advance Contact [UE 14-4.1.2.1]

The Production Control System (PCS) will assign GQAC work. Clerks in the ACOs contact GQ administrators identified in the GQ universe. Clerks will use a well-defined calling script, including providing confidentiality information, to ensure that all necessary information is obtained from each GQ contact called. GQs that are unable to be contacted by clerks in the office will flow into the UE Production (TEA 4) workload.

Collect GQ Advance Contact Information [UE 14-4.1.2.2]

The PCS will be used to collect the results from the GQAC contacts. Information collected includes: GQ name, address, contact name, contact phone number, expected population, and preferred enumeration method. In addition to collecting general GQ information, clerks also use the PCS system to collect information that is specific to Service-Based Enumeration (SBE) locations. SBEs include soup kitchens, emergency and transitional shelters, regularly scheduled mobile food vans, and targeted nonsheltered outdoor locations. Information collected for SBEs includes: the days and earliest times facilities are operating, latest times services are available to recipients, times largest meals are served, expected population, and numbers and locations of mobile food van stops.

Update GQ Advance Contact Status [UE 14-4.1.2.3]

If the clerk is able to complete the advance contact, all information, including updates, is input into PCS to support enumeration. The status identifies whether the contact status is complete and that the case has been transferred to the field workload. Any new GQs that are identified during the GQAC operational activity are marked as GQ adds within the PCS, and need validation in the MAF. To support workload forecasting, both the GQ type and maximum population are requested for newly identified GQs. New GQs that are validated are then added to the field workload.

3.4.1.3 Conduct TL Advance Contact [UE 14-4.1.3]

The Conduct TL Advance Contact activity area is subdivided into the following operational subactivities.

- Conduct TL Advance Contact [UE 14-4.1.3].
    - Attempt TL Advance Contact [UE 14-4.1.3.1].
    - Collect TL Advance Contact Information [UE 14-4.1.3.2].
    - Update TL Advance Contact Status [UE 14-4.1.3.3].

During Transitory Location Advance Contact (TLAC), ACOs will call each TL to verify the necessary TL information and if the TL will be open during production.

A detailed view of the constituent activities that make up the "Conduct TL Advance Contact" operational subactivity is given in Figure 20 below.

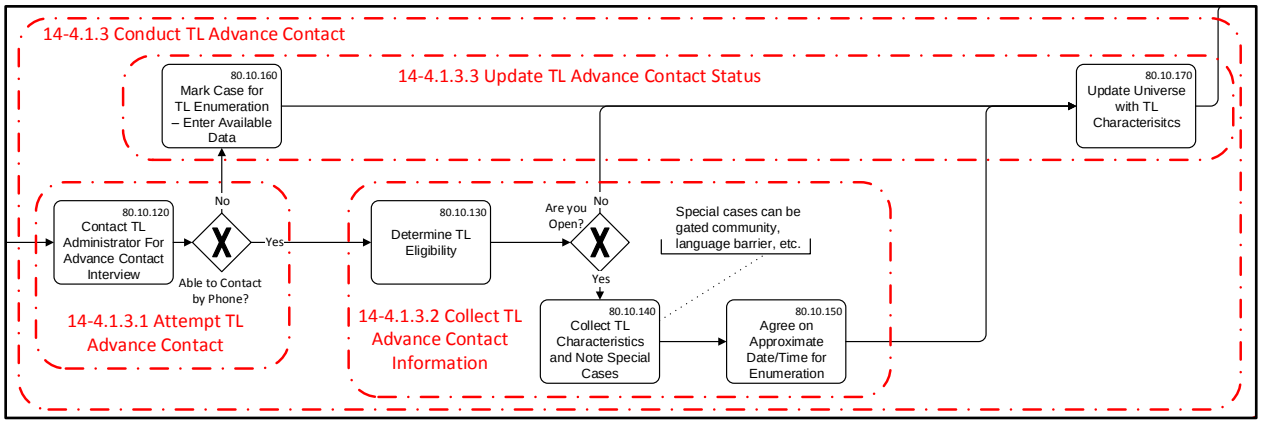

Figure 20: Conduct TL Advance Contact

Subsequent sections describe the Conduct TL Advance Contact operational subactivities in detail.

Attempt TL Advance Contact [UE 14-4.1.3.1]

The PCS will assign TLAC work. Clerks in the ACOs contact TL administrators identified from the TL universe. Clerks will use a well-defined call script, including providing confidentiality information, to ensure that all necessary information is obtained from each TL contact called. TLs that are unable to be contacted by clerks in the office will flow into the UE Production (TEA 4) workload

Collect TL Advance Contact Information [UE 14-4.1.3.2]

The PCS will be used to collect the results of the TLAC contacts. Information collected includes: TL name, address and contact name, contact phone number, number of sites, and if the TL will be open during production.

Update TL Advance Contact Status [UE 14-4.1.3.3]

If the clerk is able to complete the advance contact, all information, including updates, is input into PCS to support enumeration. Updates to information are included in the collection system. The status identifies whether the contact status is complete, or whether the case has been transferred to the field workload. Any new TLs that are identified during the TLAC operational

activity are marked as TL adds within the PCS, and need validation in the MAF. To support workload forecasting both the TL type and number of TL units are requested for newly identified TLs. New TLs are then added to the field workload.

3.4.2 Conduct GQ Enumeration – eResponse Transfer (TEA 4) [UE 14-4.2]

The Conduct GQ Enumeration – eResponse Transfer (TEA 4) activity area is subdivided into the following operational subactivities.

- Conduct GQ Enumeration – eResponse Transfer (TEA 4) [UE 14-4.2].
    - Request and Receive eResponse File from GQ Administrator [UE 14-4.2.1].
    - Conduct Verification of eResponse File [UE 14-4.2.2].
    - Perform Data Quality Checks and Calculations [UE 14-4.2.3].
    - Closeout Case [UE 14-4.2.4].

A detailed view of the constituent activities that make up the "Conduct GQ Enumeration – eResponse Transfer (TEA 4)" operational subactivity is given in Figure 21 below.

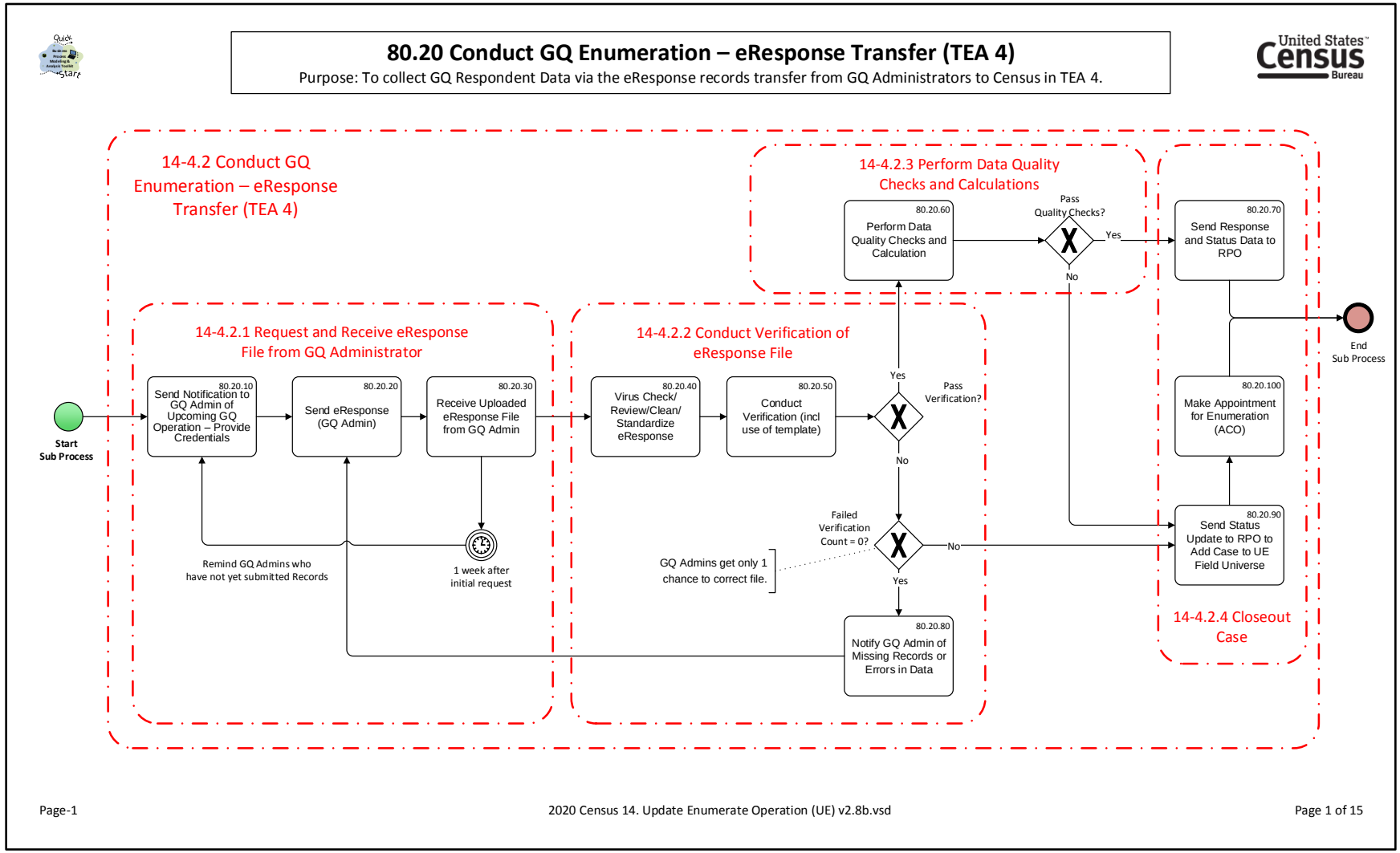

Figure 21: Conduct GQ Enumeration – eResponse Transfer (TEA 4)

Subsequent sections describe the Conduct GQ Enumeration – eResponse Transfer (TEA 4) operational subactivities in detail.

3.4.2.1 Request and Receive eResponse File from GQ Administrator [UE 14-4.2.1]

A detailed view of the constituent activities that make up the "Request and Receive eResponse File from GQ Administrator" operational subactivity is given in Figure 22 below.

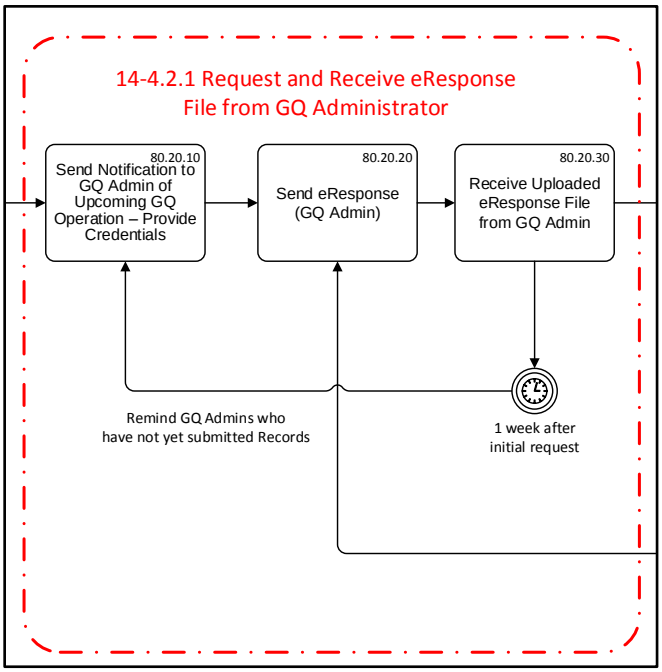

Figure 22: Request and Receive eResponse File from GQ Administrator

Census Bureau will send participating GQ administrators credentials to access the eResponse portal. The electronic portal will provide viewable and printable information including the assigned Office of Management and Budget (OMB) number for the census and the approved expiration date; a message to the GQ administrators encouraging participation in the census; a confidentiality statement; Census Bureau standard template and example, accessibility, privacy, and security information, and toll-free Help Desk number.

Administrators will have the option to provide eResponse data by downloading the Census Bureau's template and entering or copying and pasting their information into the template. GQ administrators will then upload their completed file to the secure eResponse website. Administrators will receive notification that their data was received. Administrators will also be automatically notified if there are missing records or errors in the data that they provide.

3.4.2.2 Conduct Verification of eResponse File [UE 14-4.2.2]

A detailed view of the constituent activities that make up the "Conduct Verification of eResponse File" operational subactivity is given in Figure 23 below.

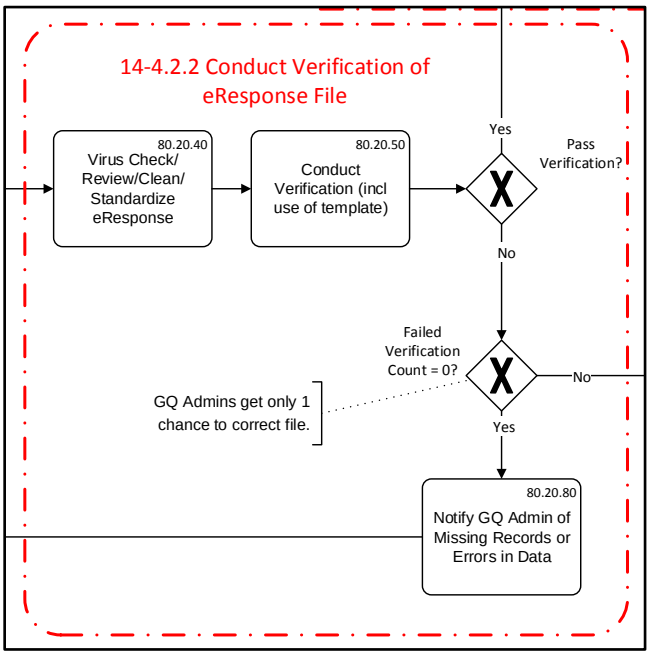

Figure 23: Conduct Verification of eResponse File

Each eResponse file is subject to verification. This verification is to ensure the minimum data is received. Cases that do not pass minimum verification result in a notification being sent to the GQ administrator. This notification informs the administrator that there were issues with their submission and provides them an opportunity to resolve and resubmit GQ data.

3.4.2.3 Perform Data Quality Checks and Calculations [UE 14-4.2.3]

A detailed view of the constituent activities that make up the "Perform Data Quality Checks and Calculations" operational subactivity is given in Figure 24 below.

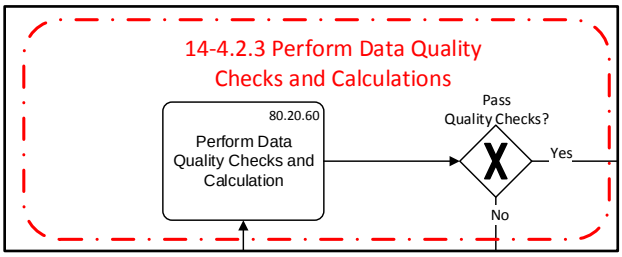

Figure 24: Perform Data Quality Checks and Calculations

Data quality checks ensure that response files uploaded by GQ administrators meet quality standards. These quality standards are derived by business rules applied to the GQ eResponse operation and by thresholds developed by DSSD. The eResponse portal includes built-in logic and algorithms to ensure that response data are received in a usable format and quality for the Census Bureau.

3.4.2.4 Closeout Case [UE 14-4.2.4]

A detailed view of the constituent activities that make up the "Closeout Case" operational subactivity is given in Figure 25 below.

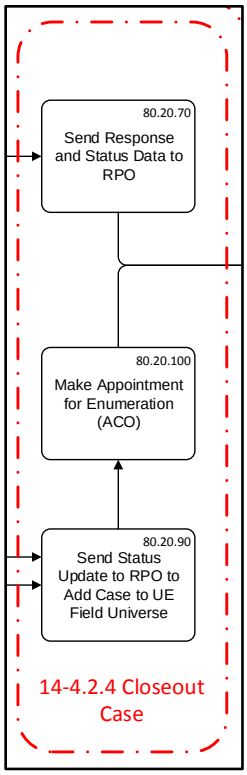

Figure 25: Closeout Case

Response data and case statuses for GQs successfully enumerated through eResponse are sent to RPO and the GQs are identified as completed. GQs that were not successfully enumerated through eResponse are not statused as complete and are sent to RPO to be added to the UE field universe.

3.4.3 Conduct UE Production (TEA 4) [UE 14-4.3]

The Conduct UE Production (TEA 4) activity area is subdivided into the following operational subactivities.

- Conduct UE Production (TEA 4) [UE 14-4.3].
    - Receive TEA 4 UE Production Work Assignment [UE 14-4.3.1].
    - Perform TEA 4 UE Production Canvassing [UE 14-4.3.2].
    - Enumerate Group Quarters or Transitory Location in TEA 4 [UE 14-4.3.3].
    - Enumerate Housing Unit in TEA 4 [UE 14-4.3.4].
    - Record Time and Expense Daily for TEA 4 Work [UE 14-4.3.5].
    - Review TEA 4 Completed Work and Time and Expense Records [UE 14-4.3.6].
    - Perform Quality Assurance Activities for TEA 4 [UE 14-4.3.7].
    - Deliver TEA 4 Completed Work and Time and Expense Records [UE 14-4.3.8].

This procedure is the same as TEA 2 UE Production (see section 3.3). The exception is that the enumeration of GQs and TLs will be included in the enumeration workload.

A detailed view of the constituent activities that make up the “Conduct UE Production (TEA 4)” operational subactivity is given in Figure 26 below.

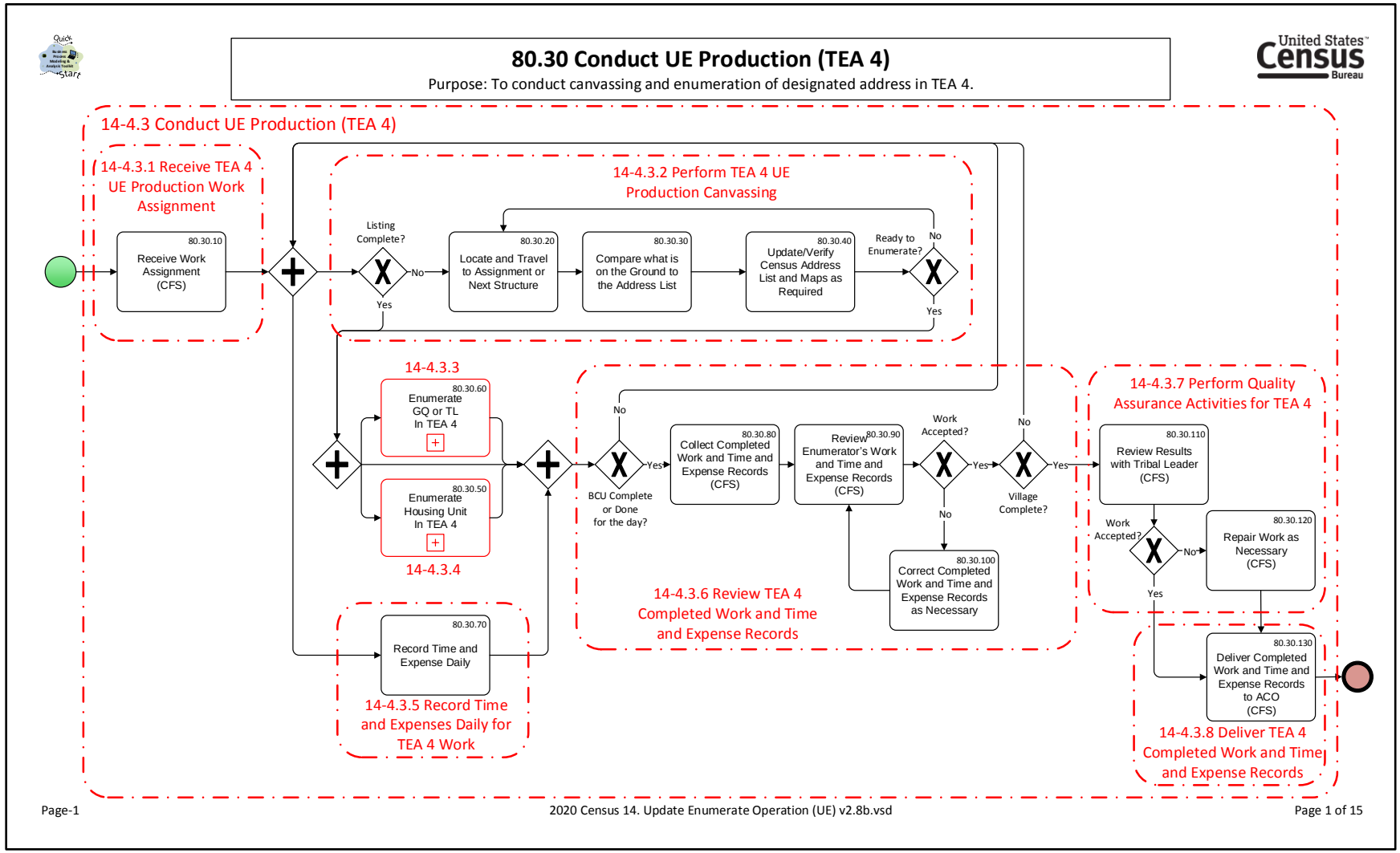

Figure 26: Conduct UE Production (TEA 4)

Subsequent sections describe the Conduct UE Production (TEA 4) operational subactivities in detail.

3.4.3.1 Receive TEA 4 UE Production Work Assignment [UE 14-4.3.1]

This procedure is the same as TEA 2 UE Production (see section 3.3.1). The exception is that the ACO staff prepares assignments and training materials for the corresponding CFS in its entirety. ACO staff ship the assembled assignment packages to the appropriate enumeration area utilizing a contract carrier.

3.4.3.2 Perform TEA 4 UE Production Canvassing [UE 14-4.3.2]

A detailed view of the constituent activities that make up the "Perform TEA 4 UE Production Canvassing" operational subactivity is given in Figure 27 below.

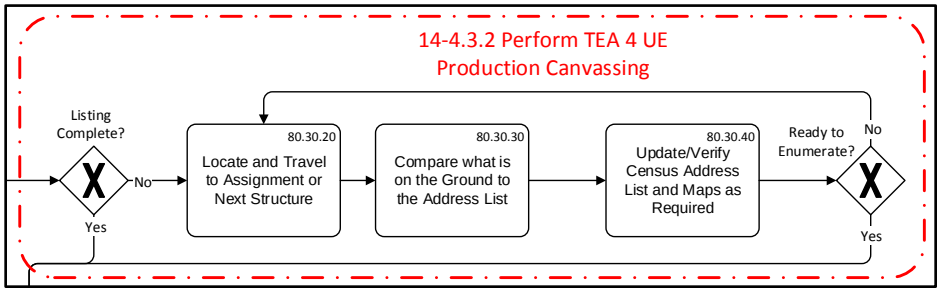

Figure 27: Perform TEA 4 UE Production Canvassing

This procedure is the same as TEA 2 UE Production (see section 3.3.2). The exception is that the CFS will complete the canvassing workload.

3.4.3.3 Enumerate Group Quarters or Transitory Location in TEA 4 [UE 14-4.3.3]

The Enumerate Group Quarters or Transitory Location in TEA 4 activity area is subdivided into the following operational subactivities.

- Enumerate Group Quarters or Transitory Location in TEA 4 [UE 14-4.3.3].
    - Enumerate Group Quarters [UE 14-4.3.3.1].
    - Enumerate Transitory Location [UE 14-4.3.3.2].

While canvassing their assigned BCU, the UE CFS conducts interviews at all GQs and TLs that are within the village. During the interview, the CFS determines the Census Day status of the GQ or TL and completes a paper questionnaire. The CFS also completes a questionnaire for any added GQs or TLs.

A detailed view of the constituent activities that make up the “Enumerate Group Quarters or Transitory Location in TEA 4” operational subactivity is given in Figure 28 below.

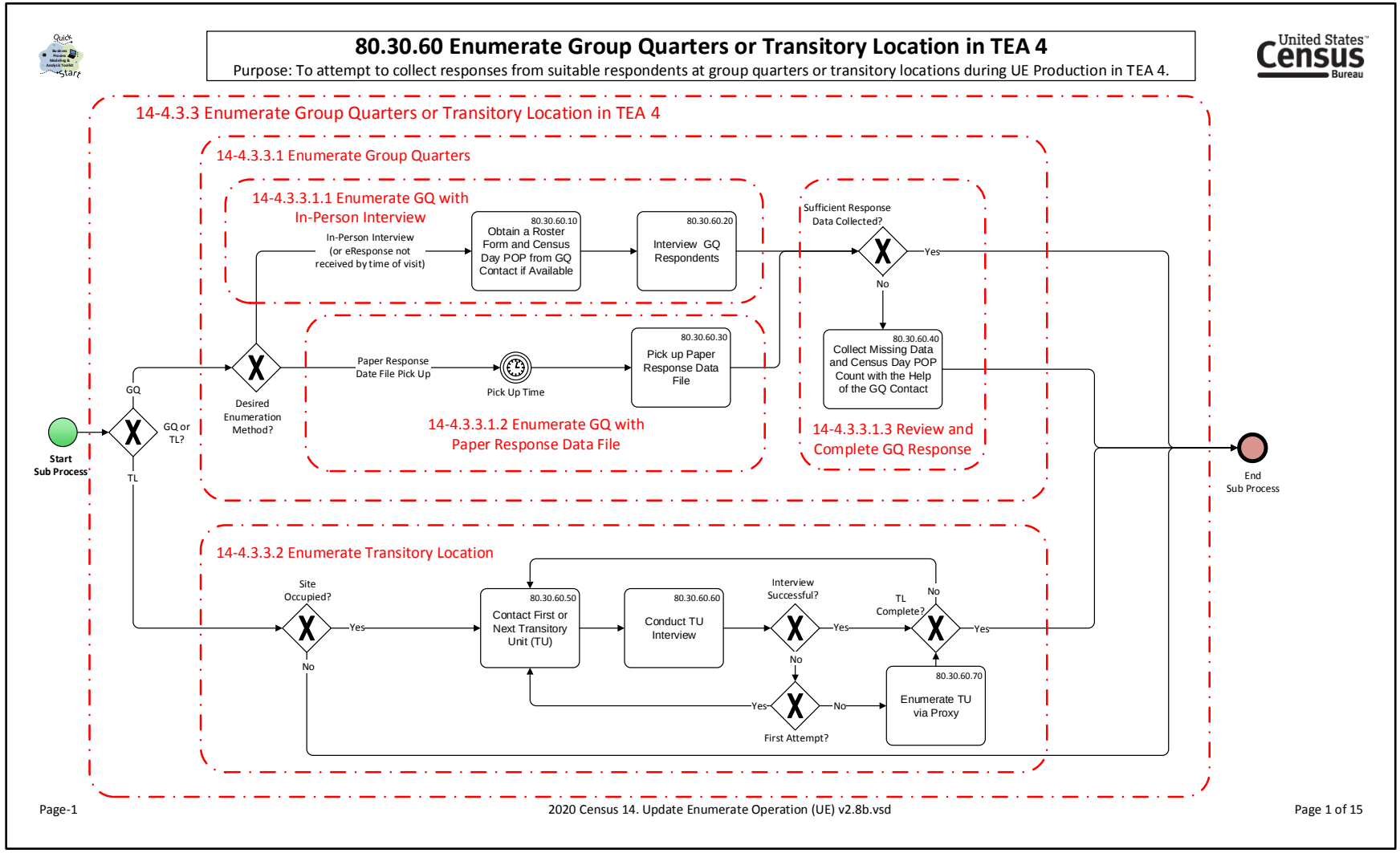

Figure 28: Enumerate Group Quarters or Transitory Location in TEA 4

Subsequent sections describe the Enumerate Group Quarters or Transitory Location in TEA 4 operational subactivities in detail.

Enumerate Group Quarters [UE 14-4.3.3.1]

The Enumerate Group Quarters activity area is subdivided into the following operational subactivities.

- Enumerate Group Quarters [UE 14-4.3.3.1].
    - Enumerate GQ with In-Person Interview [UE 14-4.3.3.1.1].
    - Enumerate GQ with Paper Response Data File [UE 14-4.3.3.1.2].
    - Review and Complete GQ Response [UE 14-4.3.3.1.3].

GQs in TEA 4 will be offered two methods for enumeration as designed by the GQE operation. The methods of enumeration offered in TEA 4 are:

- Enumerate GQ by in-person interviews.
- Enumerate GQ by paper response data file.

A detailed view of the constituent activities that make up the "Enumerate Group Quarters" operational subactivity is given in Figure 29 below.

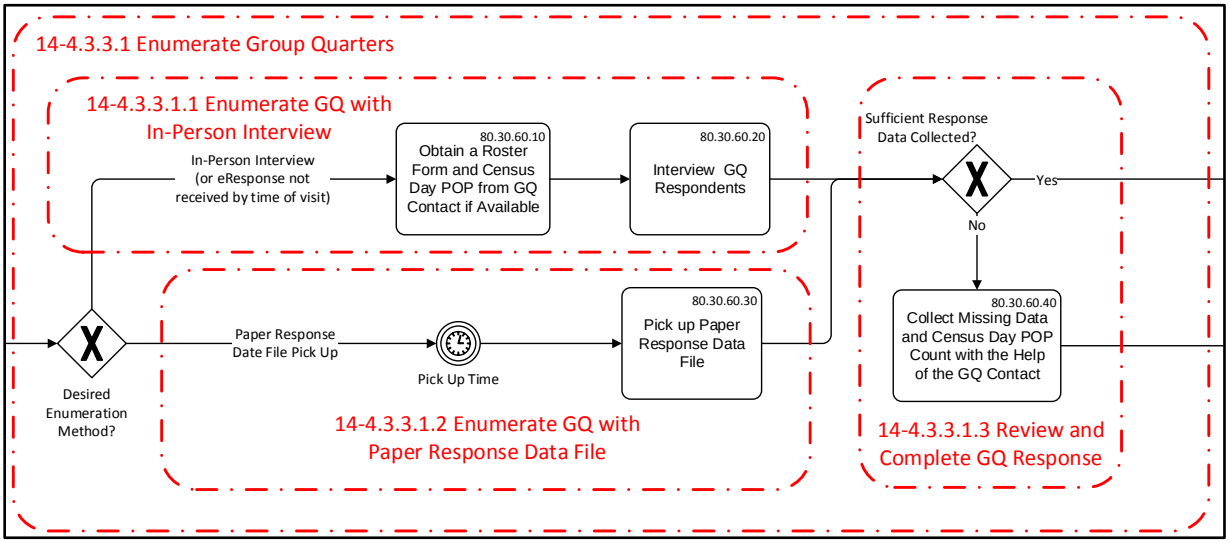

Figure 29: Enumerate Group Quarters

Subsequent sections describe the Enumerate Group Quarters operational subactivities in detail.

Enumerate GQ with In-Person Interview [UE 14-4.3.3.1.1]

The primary method of conducting in-person enumeration of people residing in GQs is by using the Individual Census Questionnaire (ICQ) as the paper data collection instrument. In-person interviewing is planned for all GQ types that are part of the field enumeration workload; that is, GQs that are not enumerated using the eResponse methodology.

Enumerate GQ with Paper Response Data File [UE 14-4.3.3.1.2]

Paper response data collection involves the CFS collecting a roster of residents and associated demographic data from the GQ administrator or contact person. The CFS will evaluate the roster to make sure that it contains response data. Minimally complete responses include name, sex, and age or date of birth, though the CFS is instructed to work with the GQ administrator or contact person to collect responses for all questions: name, usual home elsewhere, address, sex, age or date of birth, and race and ethnicity.

Review and Complete GQ Response [UE 14-4.3.3.1.3]

The CFS will review completed ICQs and compare the number of ICQs with the expected population. The CFS also works with GQ administrators or points of contact to resolve any issues. For the GQs enumerated with the ICQ, enumerators will mark the correct "Answered by" box to indicate whether the respondent participated in the completion of the ICQ.

Enumerate Transitory Location [UE 14-4.3.3.2]

A detailed view of the constituent activities that make up the "Enumerate Transitory Location" operational subactivity is given in Figure 30 below.

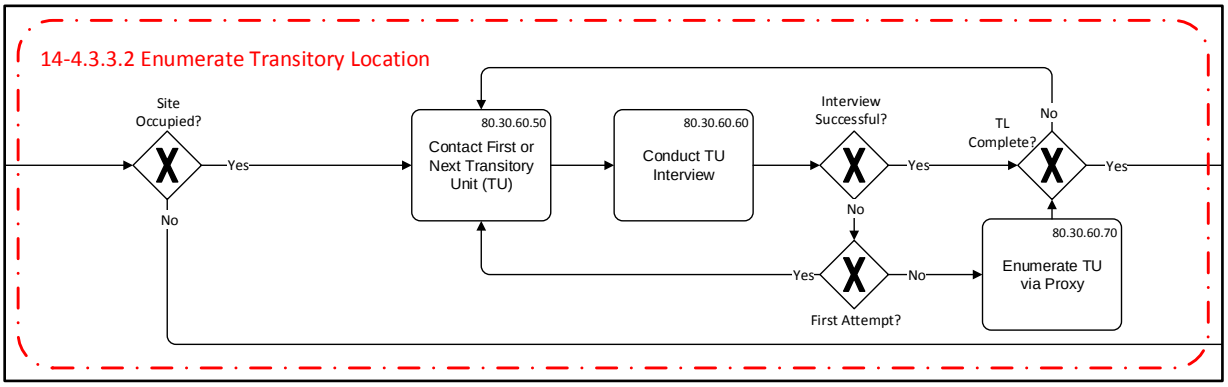

Figure 30: Enumerate Transitory Location

The primary method of conducting in-person enumeration of transitory units at a TL is by using a paper questionnaire as the data collection instrument. In-person interviewing is planned for all

TL types that are part of the field enumeration workload. An initial enumeration attempt will be made at each TU. The TUs where a successful interview was not made during the initial attempt will be proxy enumeration by proxy interview.

3.4.3.4 Enumerate Housing Unit in TEA 4 [UE 14-4.3.4]

The Enumerate Housing Unit in TEA 4 activity area is subdivided into the following operational subactivities.

- Enumerate Housing Unit in TEA 4 [UE 14-4.3.4].
    - Attempt Interview [UE 14-4.3.4.1].
    - Enumerate Housing Unit [UE 14-4.3.4.2].
    - Enumerate Housing Unit Via Proxy Interview [UE 14-4.3.4.3].
    - Verify Housing Unit Vacancy Via Proxy [UE 14-4.3.4.4].

This procedure is the same as TEA 2 UE Production (see section 3.3.3). A detailed view of the constituent activities that make up the “Enumerate Housing Unit in TEA 4” operational subactivity is given in Figure 31 below.

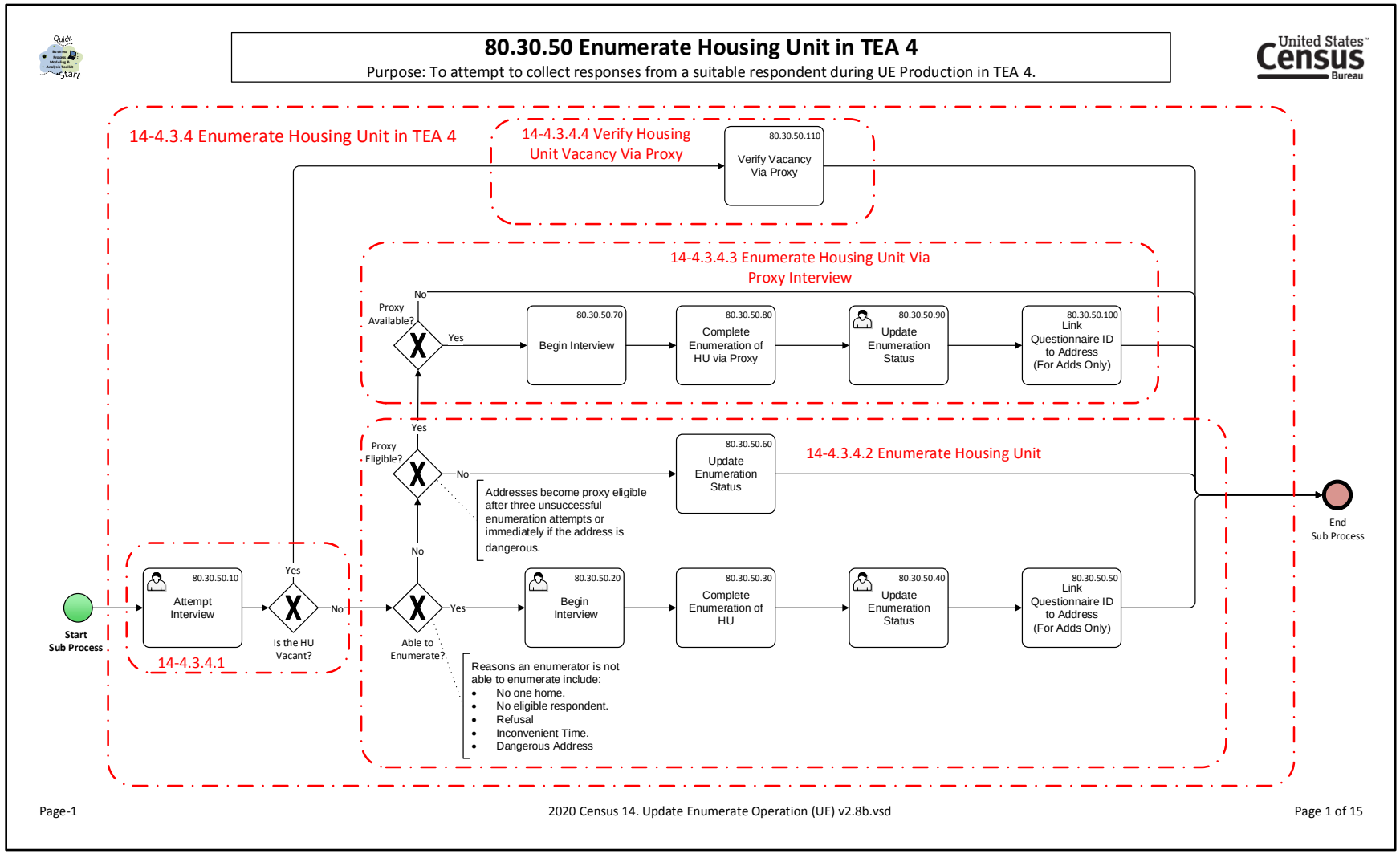

Figure 31: Enumerate Housing Unit in TEA 4

Subsequent sections describe the Enumerate Housing Unit in TEA 4 operational subactivities in detail.

Attempt Interview [UE 14-4.3.4.1]

A detailed view of the constituent activities that make up the "Attempt Interview" operational subactivity is given in Figure 32 below.

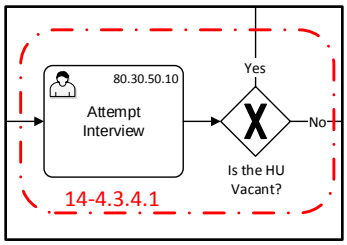

Figure 32: Attempt Interview

This procedure is the same as TEA 2 UE Production (see section 3.3.3.1).

Enumerate Housing Unit [UE 14-4.3.4.2]

A detailed view of the constituent activities that make up the "Enumerate Housing Unit" operational subactivity is given in Figure 33 below.

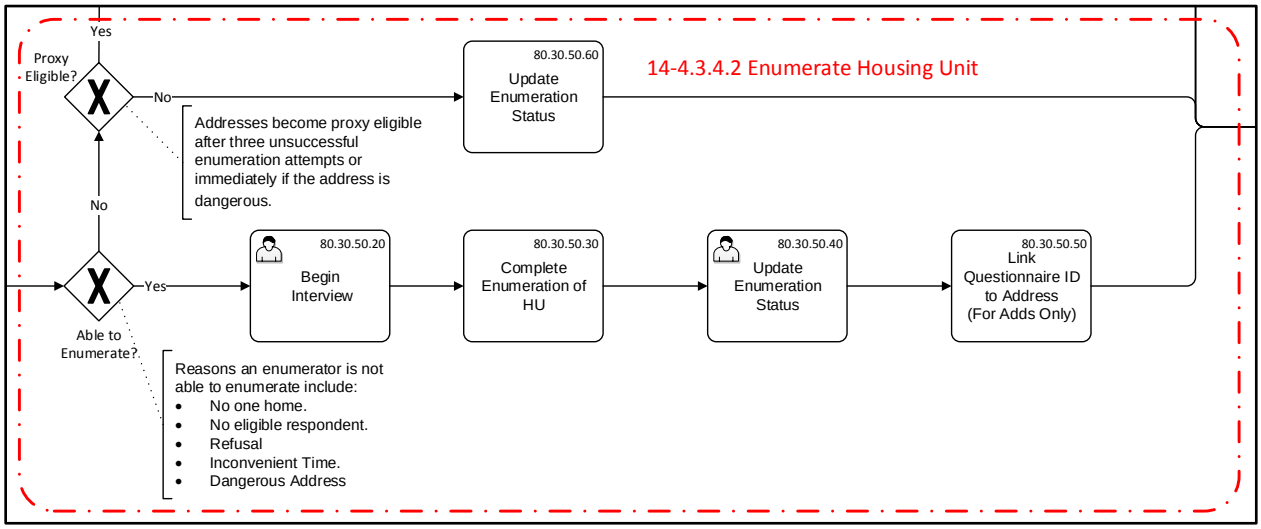

Figure 33: Enumerate Housing Unit

This procedure is the same as TEA 2 UE Production (see section 3.3.3.2).

Enumerate Housing Unit Via Proxy Interview [UE 14-4.3.4.3]

A detailed view of the constituent activities that make up the "Enumerate Housing Unit Via Proxy Interview" operational subactivity is given in Figure 34 below.

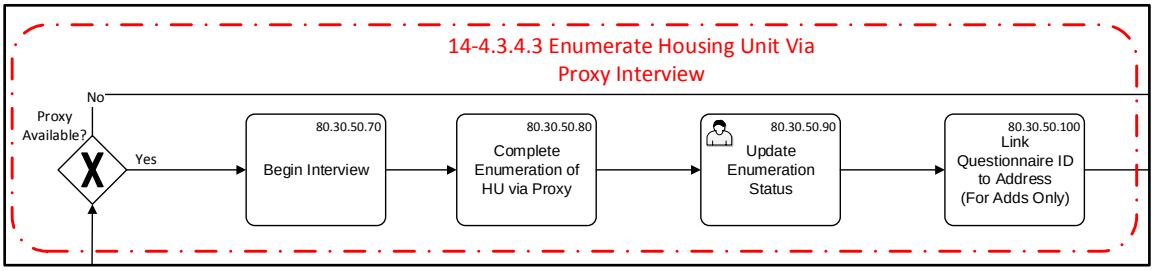

Figure 34: Enumerate Housing Unit Via Proxy Interview

This procedure is the same as TEA 2 UE Production (see section 3.3.3.3).

Verify Housing Unit Vacancy Via Proxy [UE 14-4.3.4.4]

This procedure is the same as TEA 2 UE Production (see section 3.3.3.4).

3.4.3.5 Record Time and Expense Daily for TEA 4 Work [UE 14-4.3.5]

Refer to Figure 26 to see where "Record Time and Expense Daily for TEA 4 Work" operational activity fits.

Field staff (CFS and Enumerators) input hours, mileage, and expenditures, and submit for approval to their supervisor daily.

3.4.3.6 Review TEA 4 Completed Work and Time and Expense Records [UE 14-4.3.6]

Refer to Figure 26 to see where "Review TEA 4 Completed Work and Time and Expense Records" operational activity fits. A detailed view of the constituent activities that make up this activity is given in Figure 35 below.

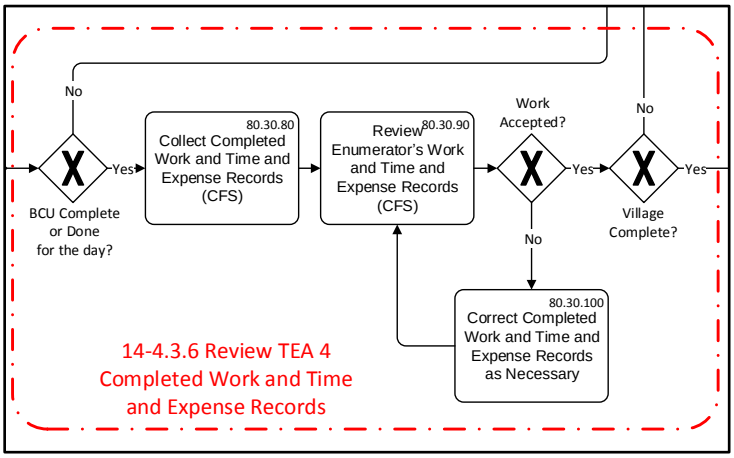

Figure 35: Review TEA 4 Completed Work and Time and Expense Records

This procedure is the same as TEA 2 UE Production (see section 3.3.5).

3.4.3.7 Perform Quality Assurance Activities for TEA 4 [UE 14-4.3.7]

Refer to Figure 26 to see where "Perform Quality Assurance Activities for TEA 4" operational activity fits. A detailed view of the constituent activities that make up this activity is given in Figure 36 below.

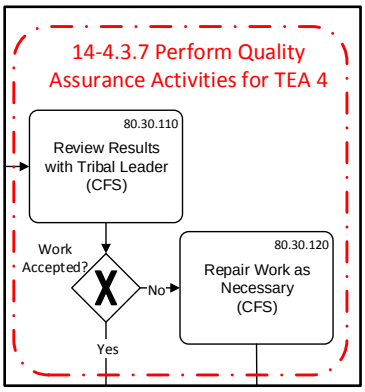

Figure 36: Perform Quality Assurance Activities for TEA 4

Upon completion of the enumeration process, and before the CFS leaves the village, a sworn-in local official (tribal leader/liaison) reviews and certifies the list of addresses and the population for the settlement at the BCU level. Any discrepancies are resolved immediately.

3.4.3.8 Deliver TEA 4 Completed Work and Time and Expense Records [UE 14-4.3.8]

Refer to Figure 26 to see where "Deliver TEA 4 Completed Work and Time and Expense Records" operational activity fits. This procedure is the same as TEA 2 UE Production (see section 3.3.6).

After review, the CFS delivers complete work and time and expense records to the ACO, where they are keyed into the automated system. The CFS and ACO will communicate to discuss shipping options.

3.5 Paper Field Materials at ACO [UE 14-5]

Figure 37 shows the BPM for the Paper Field Materials at ACO [UE 14-5] activity area (area within the gray rounded rectangle) and its constituent activities within the overall context of the UE operation.

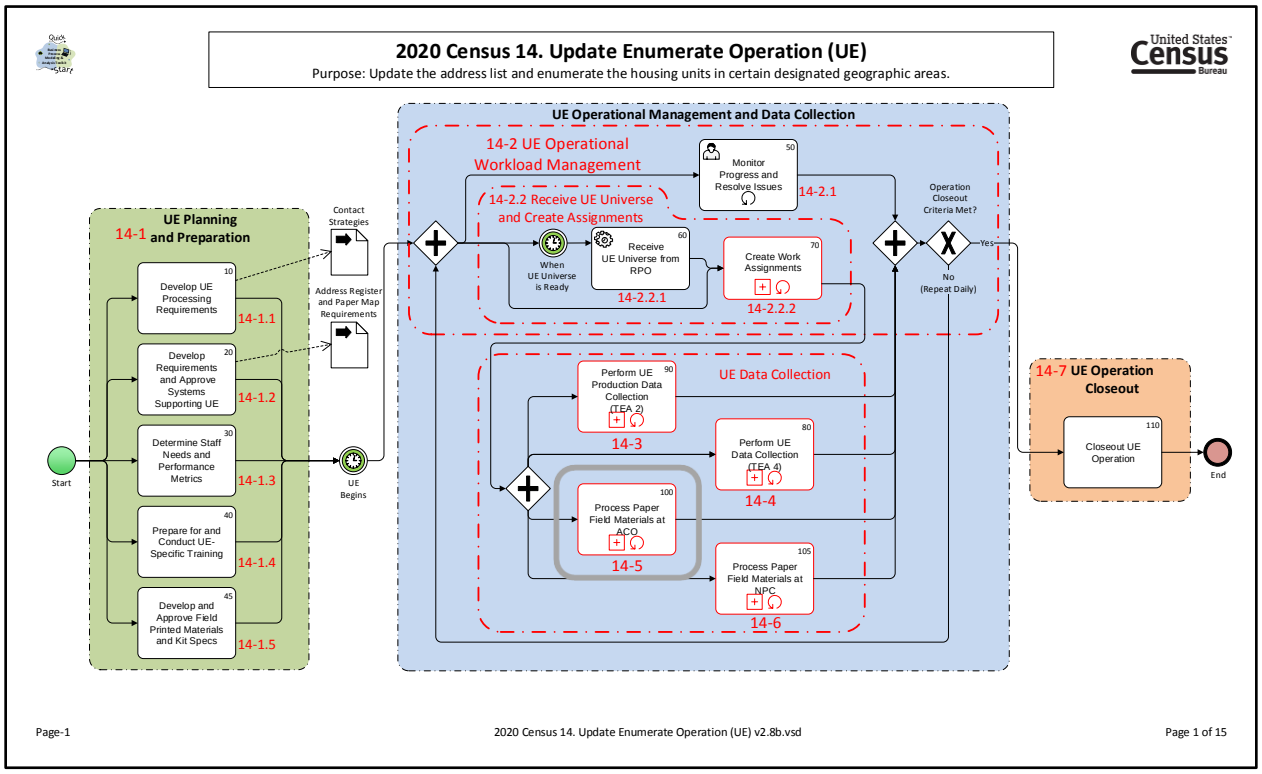

Figure 37: Paper Field Materials at ACO [UE 14-5]

As shown in Figure 38, the Paper Field Materials at ACO activity area is subdivided into the following operational subactivities.

- Paper Field Materials at ACO [UE 14-5].
    - Receive Completed Work and Time and Expense Records at ACO [UE 14-5.1].
    - Process Time and Expense Records [UE 14-5.2].
    - Process Questionnaires [UE 14-5.3].
    - Check-In Address Registers and Maps [UE 14-5.4].
    - Process Paper Response Data File [UE 14-5.5].
    - Check Out and Ship Paper Field Materials [UE 14-5.6].

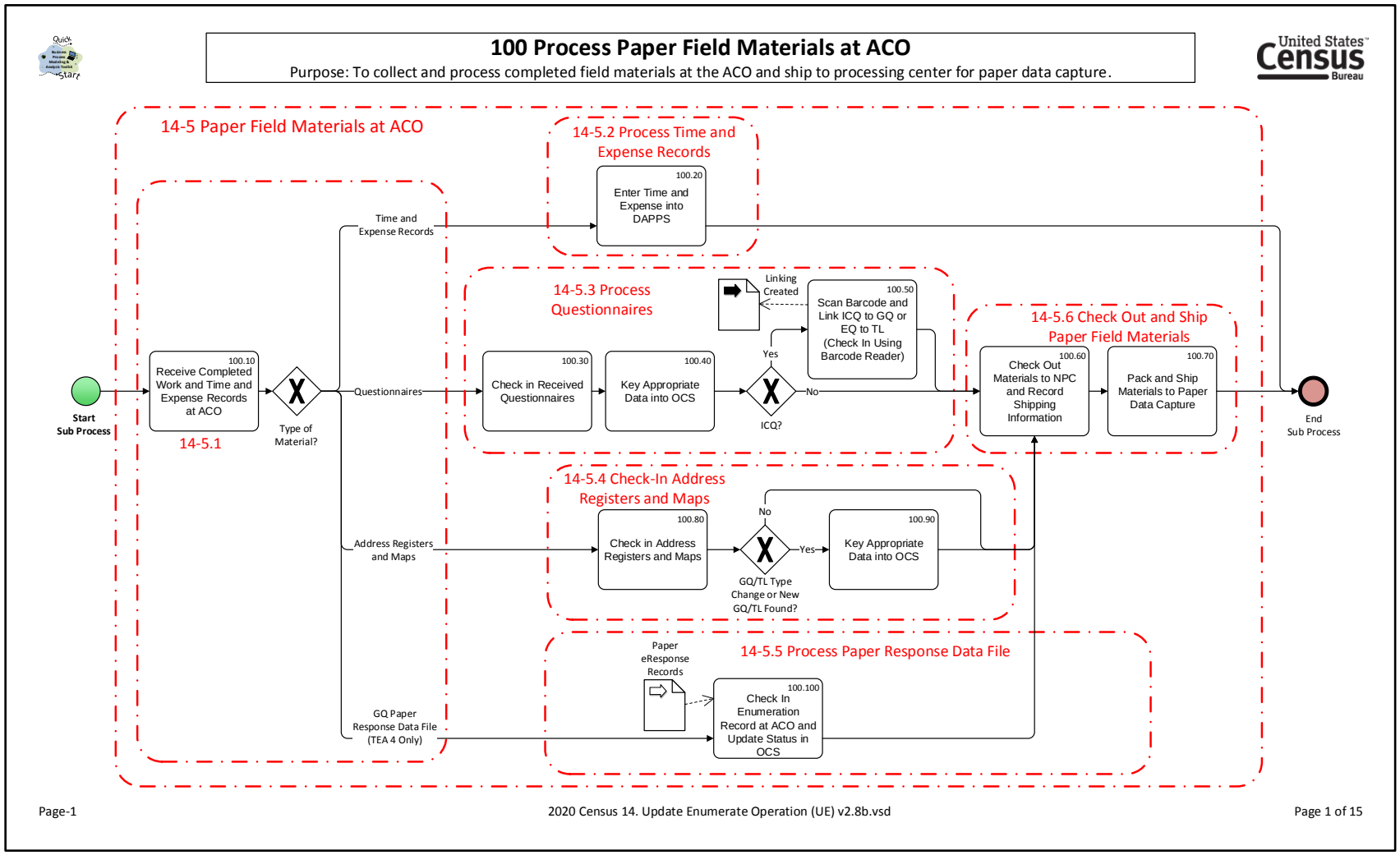

Figure 38: Paper Field Materials at ACO [UE 14-5] Constituent Activities

Subsequent sections describe the Paper Field Materials at ACO operational subactivities in detail.

3.5.1 Receive Completed Work and Time and Expense Records at ACO [UE 14-5.1]

The CFS delivers completed work and time and expense records to the ACO for check-in and office review. When the ACO receives completed work and materials, the delivery is sorted by type of work and material to be checked-in and processed.

3.5.2 Process Time and Expense Records [UE 14-5.2]

ACO staff review paper time and expense records from TEA 4 and enter them into the payroll system (DAPPS).

3.5.3 Process Questionnaires [UE 14-5.3]

A detailed view of the constituent activities that make up the "Process Questionnaires" operational subactivity is given in Figure 39 below.

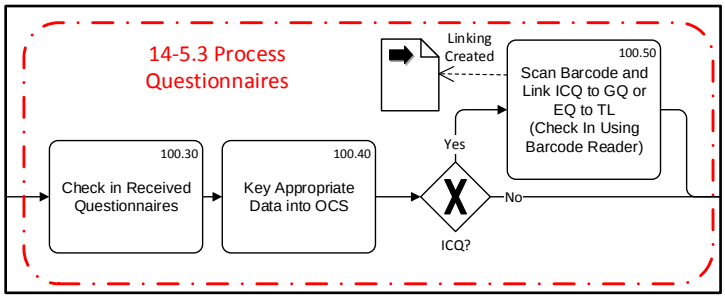

Figure 39: Process Questionnaires

ACO staff check-in review and check-in received questionnaires. During the check-in process some information is entered into ECaSE FLD-OCS to support the generation of up-to-date reports reflecting the progress of the operation. If the questionnaire has a Processing ID, that barcode is scanned to link that questionnaire to the address in the address register.

3.5.4 Check-In Address Registers and Maps [UE 14-5.4]

A detailed view of the constituent activities that make up the "Check-In Address Registers and Maps" operational subactivity is given in Figure 40 below.

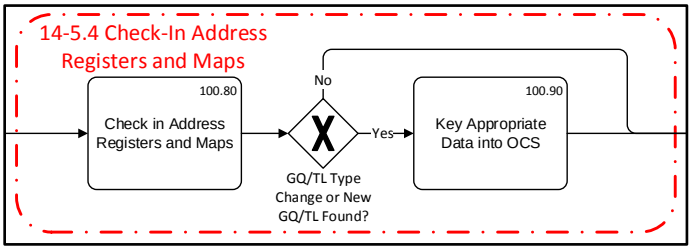

Figure 40: Check-In Address Registers and Maps

When completed address registers and maps arrive at the ACO, ACO staff use the Quality Assurance Review Page, to review completed work. The ACO staff review all completed questionnaires, address registers, and maps to ensure the work was completed correctly and for any signs of potential falsification. After completing the review, the ACO staff key the assignment information into ECaSE FLD-OCS. The ACO staff checks-in the materials and prepares them for delivery for data capture. If there are errors the ACO staff will make necessary corrections. If falsification is identified, the ACO staff will notify the CFM.

3.5.5 Process Paper Response Data File [UE 14-5.5]

A detailed view of the constituent activities that make up the "Process Paper Response Data File" operational subactivity is given in Figure 41 below.

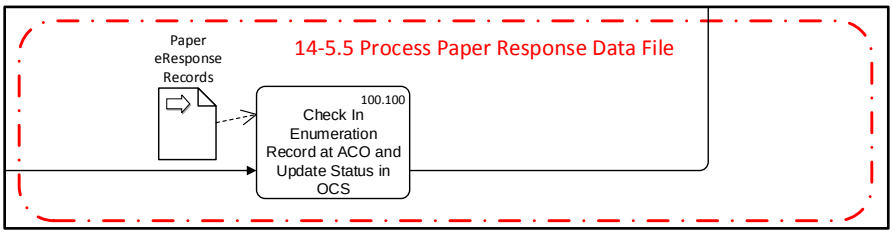

Figure 41: Process Paper Response Data File

Paper response data includes ICQs that are scanned into integrated Computer Assisted Data Entry (iCADE) as part of the Paper Data Capture (PDC) operation. Also included are response data collected on paper rosters and keyed by NPC clerks into iCADE. After GQ Enumeration is completed, paper response data is sent to RPO for postprocessing and analysis.

3.5.6 Check Out and Ship Paper Field Materials [UE 14-5.6]

A detailed view of the constituent activities that make up the "Check Out and Ship Paper Field Materials" operational subactivity is given in Figure 42 below.

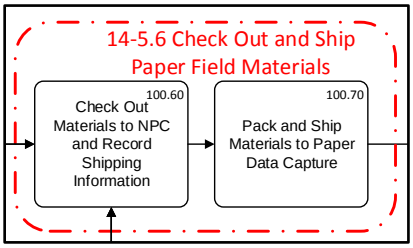

Figure 42: Check Out and Ship Paper Field Materials

ACO staffs check out questionnaires in the ECaSE FLD-OCS to data capture on a flow basis. ACO staffs pack checked out questionnaires into boxes and ship them to the data capture sites throughout the course of the operation. In addition, the staffs check out of ECaSE FLD-OCS, pack, and ship the Address binders with contents to NPC for keying/digitizing and storage.

3.6 Paper Field Materials at NPC [UE 14-6]

Figure 43 shows the BPM for the Paper Field Materials at NPC [UE 14-6] activity area (area within the gray rounded rectangle) and its constituent activities within the overall context of the UE operation.

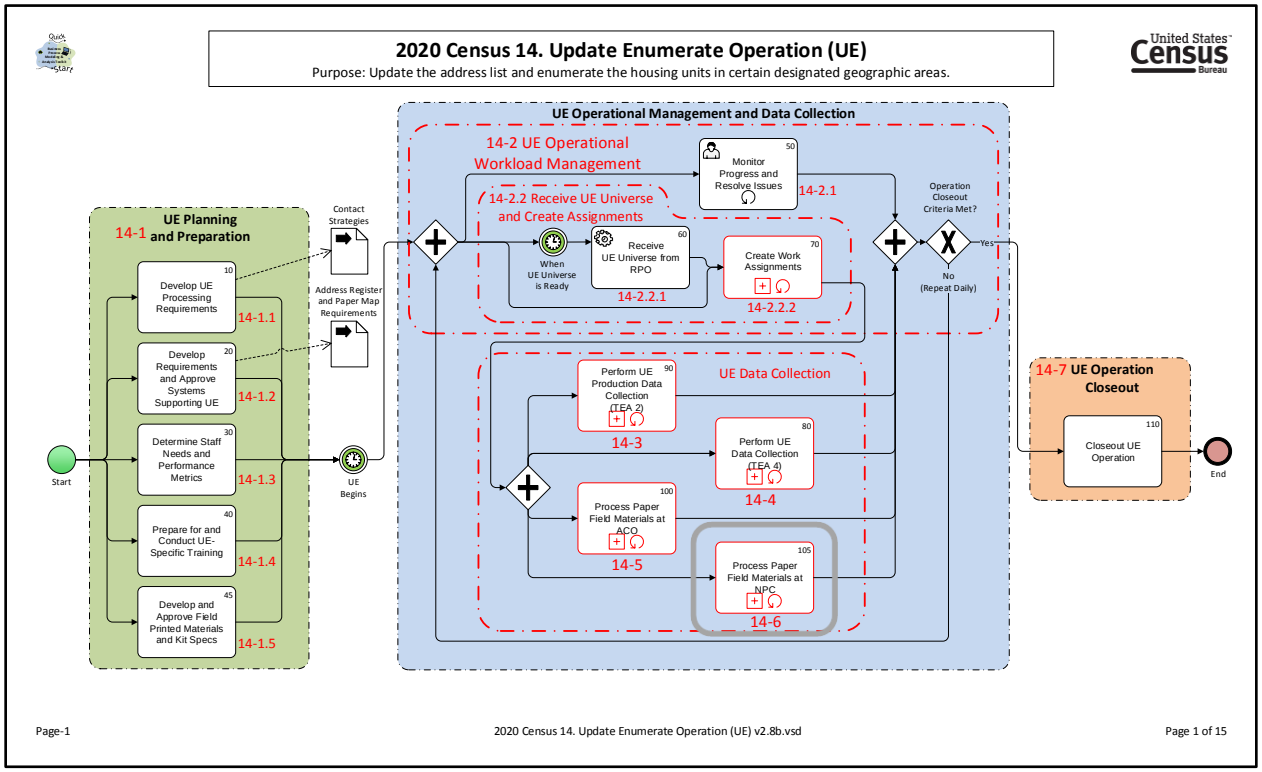

Figure 43: Paper Field Materials at NPC [UE 14-6]

As shown in Figure 44, the Paper Field Materials at NPC activity area is subdivided into the following operational subactivities.

- Paper Field Materials at NPC [UE 14-6].
  - Receive Completed Paper Field Materials at NPC [UE 14-6.1].
  - Process Paper Maps and Address Registers [UE 14-6.2].
  - Process GQ Paper Response Data File (TEA 4 Only) [UE 14-6.3].

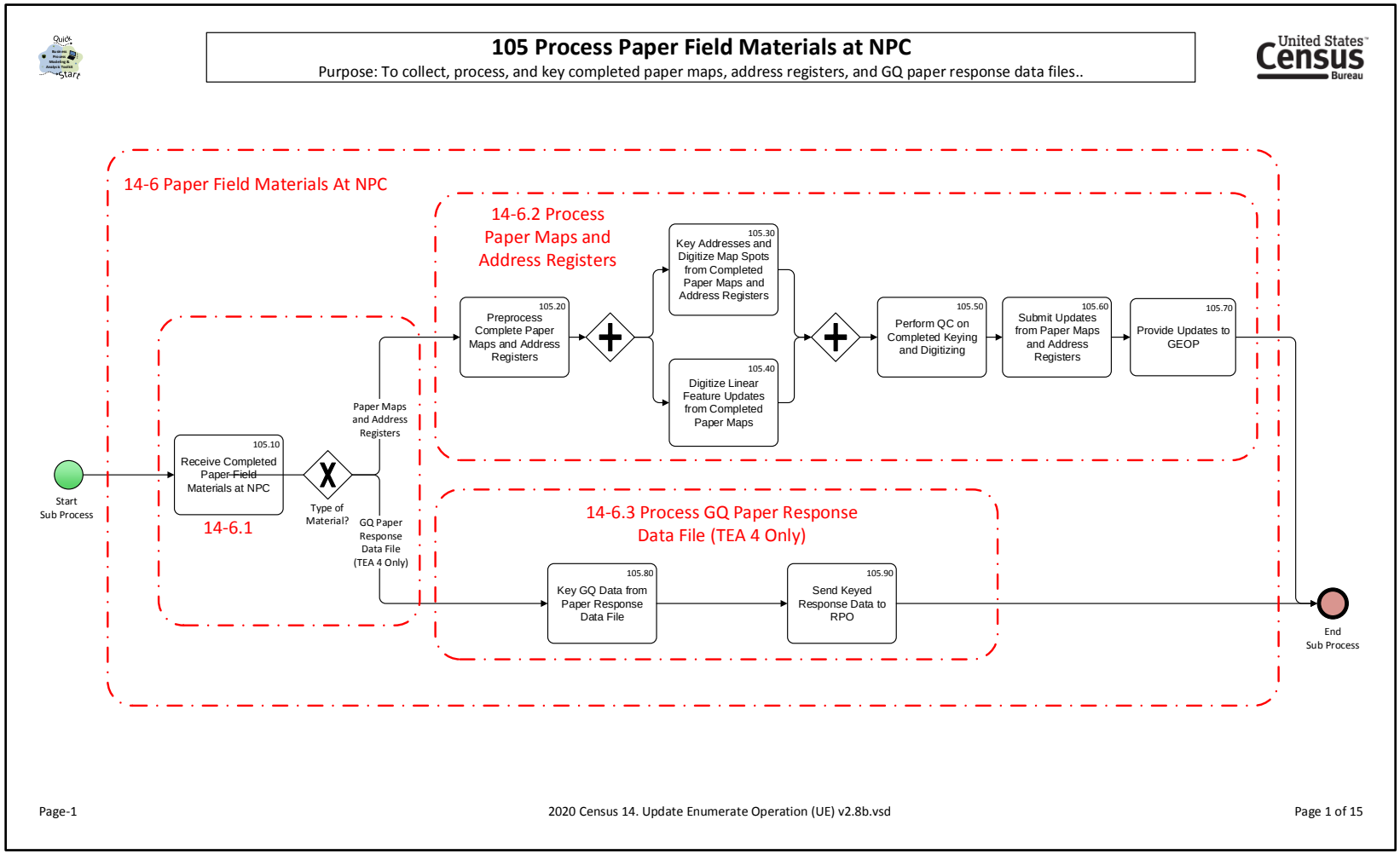

Figure 44: Paper Field Materials at NPC [UE 14-6] Constituent Activities

Subsequent sections describe the Paper Field Materials at NPC operational subactivities in detail.

3.6.1 Receive Completed Field Materials at NPC [UE 14-6.1]

When NPC receives completed field materials, clerks at NPC will sort the delivery by type and then checked-in for processing.

3.6.2 Process Paper Maps and Address Registers [UE 14-6.2]

A detailed view of the constituent activities that make up the "Process Paper Maps and Address Registers" operational subactivity is given in Figure 45 below.

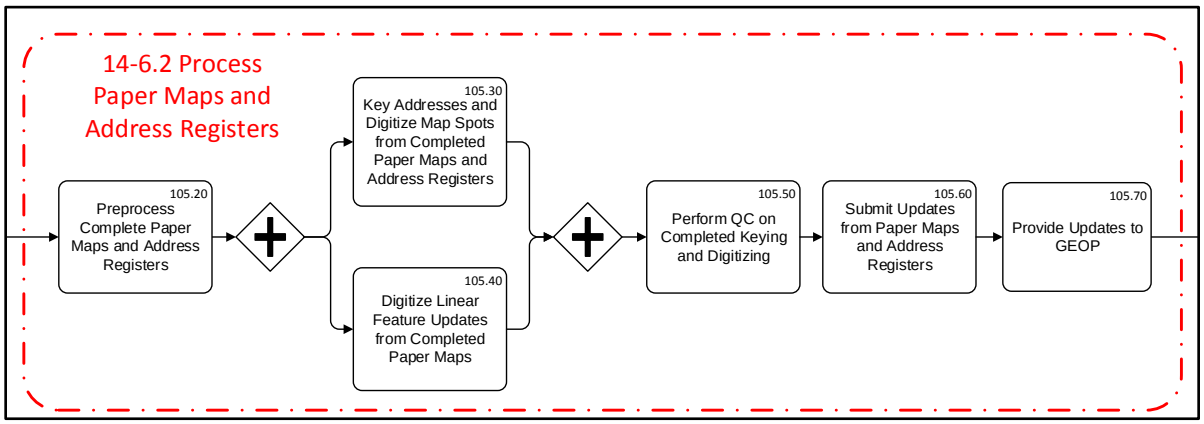

Figure 45: Process Paper Maps and Address Registers

Preprocess

Prior to keying and digitizing, a review will be conducted to ensure that materials are legible and make notations to assist the clerk that will perform the updates. Notations include corrections to minor mistakes, recorded information that is not to be keyed, or issue resolution notes.

Process

Paper maps and address registers may contain added addresses and mapspots and/or edits to existing addresses. Clerks at NPC will use GUPS to digitize and key the completed paper maps and address registers. GUPS supports the simultaneous processing of paper maps and address registers.

Quality Control

Clerks at NPC will review the completed feature and address updates to ensure that the collected data have been entered correctly and corrections/omissions are handled correctly. Further, NPC will use the QC phase as a second opportunity to resolve keying and digitizing problems.

Deliver Updates

After the QC process, the keyed and digitized data will be delivered to MAF/TIGER. The collected data is updated into the MAF/TIGER database for tabulation and for the accurate geocoding of an address.

3.6.3 Process GQ Paper Response Data File (TEA 4 Only) [UE 14-6.3]

A detailed view of the constituent activities that make up the "Process GQ Paper Response Data File (TEA 4 Only)" operational subactivity is given in Figure 46 below.

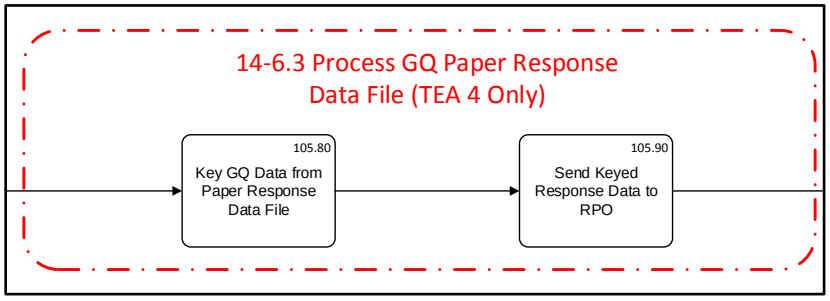

Figure 46: Process GQ Paper Response Data File (TEA 4 Only)

Clerks at NPC will key from paper the GQ data from paper response data files. The response data is sent to RPO after being keyed.

3.7 UE Operation Closeout [UE 14-7]

Figure 47 shows the BPM for the UE Operation Closeout [UE 14-7] activity area (area within the gray rounded rectangle) and its constituent activities within the overall context of the UE operation.

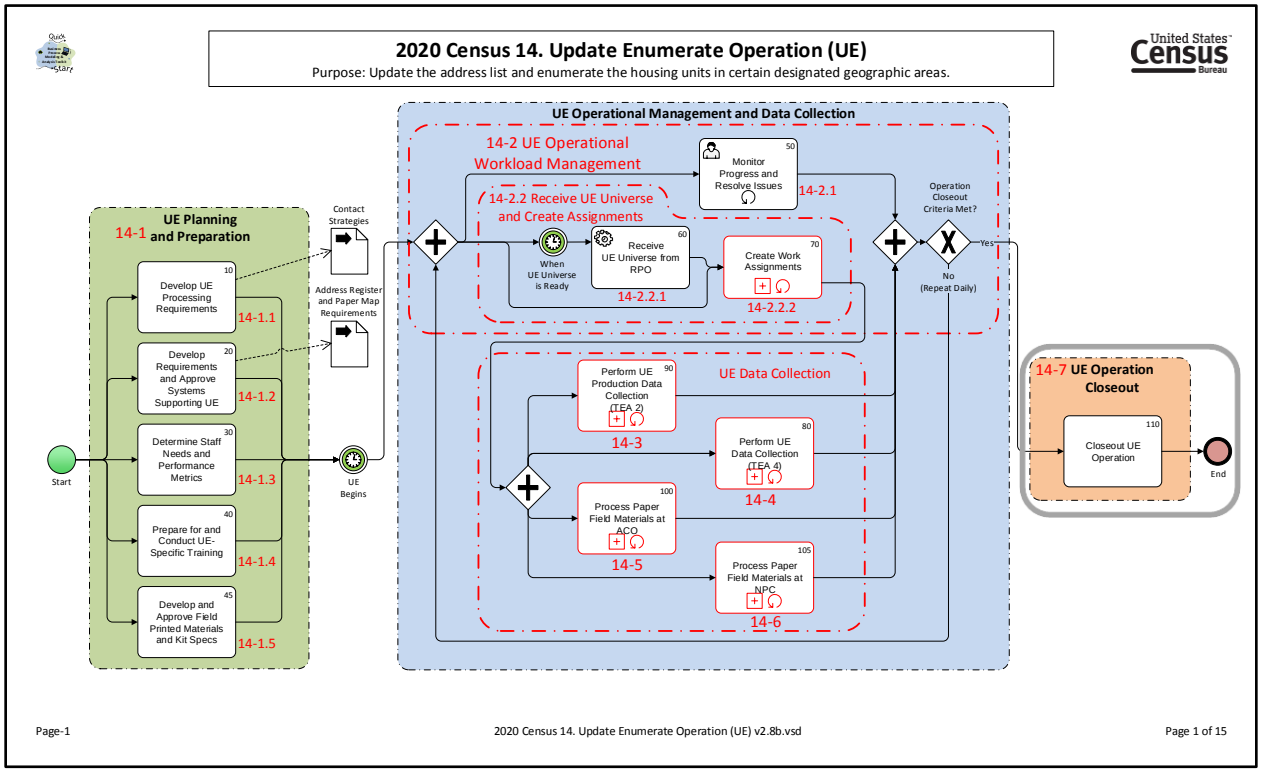

Figure 47: UE Operation Closeout [UE 14-7]

The UE closeout operation will include the following activities:

- Interacting with FLDI to reduce staff as workload reduces, including collecting materials such as mobile devices.
- Performing operational assessments such as cost and progress reporting, lessons learned, and data analysis.

4. Cost Factors

The investment in UE is projected to have minimal influence on the 2020 Census overall costs and quality. While the UE operation is not a major cost driver for the 2020 Census, the following mechanisms from the IDEF0 Context Diagram represent the resources used to support this operation and comprise part of the 2020 Census cost elements:

Staff

- Headquarters (HQ) Staff
- Regional Census Center (RCC) Staff
- Area Census Office (ACO) Staff
- Field Staff
- National Processing Center (NPC) Staff.

Sites

- HQ
- RCC
- ACO
- Field Area
- NPC
- Training Venues
- Storage Facilities

Systems

- Enterprise Censuses and Surveys Enabling Platform - Field Operational Control System (ECaSE FLD - OCS)
- Production Control System (PCS)
- Unified Tracking System (UTS)
- Centurion
- Geographic Acquis-based Topological Real-time Editing System (GATRES)
- Geographic Update Partnership Software (GUPS)

Other

- Census Networks
- Mobile Networks
- Mobile Devices

- IT Infrastructure
- Office IT Infrastructure
- Kits/Field Supplies

5. Measures of Success

For the 2020 Census operations, the corresponding Measures of Success will be documented in the operational assessment study plans and final reports. The operational assessment study plan documents the criteria that will be used to define successful completion of the operation. The operational assessment report will provide results on whether the criteria were met.

In general, operational assessments report on planned to actual variances in budget, schedules, and production and training workloads. The corresponding Measures of Success (as documented in the operational assessment study plan) include variances that exceed established thresholds. See *Preparing for the 2020 Census Operational Assessment Study Plan* for the potential scope of assessment.

Types of success measures include:

- **Process Measures** that indicate how well the process works, typically including measures related to completion dates, rates, and productivity rates.
- **Cost Measures** that drive the cost of the operation and comparisons of actual costs to planned budgets. Costs can include workload as well as different types of resource costs.
- **Measures of the Quality** of the results of the operation, typically including things such as rework rates, error rates, and coverage rates.

See the corresponding operational assessment study plan and report for the Update Enumerate Operation (UE) for details on the measures of success.

Appendix A – Acronyms and Terminology

Table 8 lists the acronyms and abbreviations used within this Detailed Operational Plan document.

Table 8: Acronyms and Abbreviations List

Acronym	Meaning
AA	Assignment Area
ACO	Area Census Office
ADC	Address Canvassing Operation
AdRecs	Administrative Records
ARC	Archiving Operation
ATAC	Automated Tracking and Control
BCU	Basic Collection Unit
BPM	Business Process Model
BPMN	Business Process Model and Notation
CDL	Census Data Lake
CEF	Census Edited File
CFD	Content and Forms Design Operation
CFM	Census Field Manager
CFS	Census Field Supervisor
CI	Coverage Improvement
CQA	Census Questionnaire Assistance
CRO	Count Review Operation
CUF	Census Unedited File
DAPPS	Decennial Applicant, Personnel, and Payroll System
DLM	Decennial Logistics Management Operation
DOP	Detailed Operational Plan
DPD	Data Products and Dissemination Operation
DRF	Decennial Response File
DSC	Decennial Service Center Operation
DSSD	Decennial Statistical Studies Division
EAE	Experiments and Evaluation Operation
ECaSE	Enterprise Censuses and Surveys Enabling Platform
ECaSE OCS	Enterprise Censuses and Surveys Enabling Platform Operational Control System

Acronym	Meaning
ECaSE-FLD-OCS	Enterprise Censuses and Surveys Enabling Platform Field Operational Control System
EQ	Enumerator Questionnaire
eResponse	Electronic Response Data Transfer
ETL	Enumeration at Transitory Locations Operation
FLD	Field Division
FLDI	Field Infrastructure Operation
FMA	Field Management Area
FPD	Forms Printing and Distribution Operation
GDP	Geographic Data Processing
GEO	Geography Division
GEOP	Geographic Programs
GQ	Group Quarters
GQAC	Group Quarters Advance Contact
GQE	Group Quarters Enumeration Operation
GUPS	Geographic Update Partnership Software
HQ	Headquarters
HU	Housing Unit
ICQ	Individual Census Questionnaire
IDEF0	Integrated Definition, Level 0
IE	Information Exchanges
IOD	Integrated Operations Diagram
IPT	Integrated Project Team
ISR	Internet Self-Response
ITIN	IT Infrastructure Operation
LMS	Learning Management System
LQ	Living Quarter
LUCA	Local Update of Census Addresses Operation
MAF	Master Address File
MAF/TIGER	Master Address File/Topologically Integrated Geographic Encoding and Referencing
MDF	Microdata Detail File
NARA	National Archives and Records Administration
NPC	National Processing Center
NID	Non-ID Operation
NOV	Notice of Visit

Acronym	Meaning
NRFU	Nonresponse Followup Operation
OMB	Office of Management and Budget
OOS	Office Operation Supervisor
PBOCS	Paper-Based Operational Control System
PCS	Production Control System
PM	Program Management Operation
PRAO	Puerto Rico Area Office
QC	Quality Control
QOO	Quality Outbound Operation
RA	Remote Alaska
RCC	Regional Census Center
RI	Reinterview
ROV	Record of Visit
RPO	Response Processing Operation
RUE	Remote Update Enumerate
SBE	Service-Based Enumeration
SR	Self-Response
TEA	Type of Enumeration Area
TL	Transitory Location
TLAC	Transitory Location Advance Contact
UE	Update Enumerate
UEO	Update Enumerate Operations
UE QC	Update Enumerate Quality Control
UHE	Usual Home Elsewhere
UL	Update Leave
UM	Universe Management
USPS	United States Postal Service
UTS	Unified Tracking System

Appendix B – References

Appendix B lists the documents or other resources used during the development of this Detailed Operational Plan document.

U.S. Census Bureau (2017), "2020 Census Operational Plan," Version 3.0, October 27, 2017.

U.S. Census Bureau (2018), "Preparing for the 2020 Census Operational Assessment Study Plan," Draft, May 10, 2018.

Appendix C – Activity Tree for Update Enumerate Operation (UE)

This appendix presents the Activity Tree for the UE operation. An Activity Tree uses an outline structure to reflect the decomposition of the major operational activities in the operation. Each activity is numbered according to its position in the outline. For example, for the current operation numbered "14," the first activity would be numbered 14-1. Subactivities under this activity would be numbered sequentially, starting again with the number one. For example, the first subactivity under the first activity would be numbered 14-1.1 the second subactivity as 14-1.2. The second activity would be numbered 14-2, and so on.

UE Activity Tree:

- 14-1 UE Planning and Preparation
  - 14-1.1 Develop UE Processing Requirements
  - 14-1.2 Develop Requirements and Approve Systems Supporting UE
  - 14-1.3 Determine Staff Needs and Performance Metrics
    - 14-1.3.1 Determine Estimated UE Operational Workload by Geographic Area
    - 14-1.3.2 Define UE Operational Performance Metrics and Targets
  - 14-1.4 Prepare for and Conduct UE-Specific Training
    - 14-1.4.1 Prepare for UE-Specific Training
      - 14-1.4.1.1 Provide UE-Specific Training Content and Requirements
      - 14-1.4.1.2 Review and Approve UE-Specific Training
    - 14-1.4.2 Conduct UE-Specific Training
  - 14-1.5 Develop and Approve Field Printed Materials and Kit Specs

- 14-2 UE Operational Workload Management
  - 14-2.1 Monitor Progress and Resolve Issues
  - 14-2.2 Receive UE Universe and Create Assignments
    - 14-2.2.1 Receive UE Universe from RPO
    - 14-2.2.2 Create Work Assignments

- 14-3 UE Production Data Collection (TEA 2)
  - 14-3.1 Receive UE TEA 2 Production Work Assignment
  - 14-3.2 Perform UE TEA 2 Production Canvassing
  - 14-3.3 Enumerate Housing Unit in TEA 2
    - 14-3.3.1 Attempt Interview
    - 14-3.3.2 Enumerate Housing Unit
    - 14-3.3.3 Enumerate Housing Unit Via Proxy Interview

        - 14-3.3.4 Verify Housing Unit Vacancy Via Proxy
    - 14-3.4 Record Time and Expense Daily for TEA 2 Work
    - 14-3.5 Review TEA 2 Completed Work and Time and Expense Records
- 14-3.6 Deliver TEA 2 Completed Work and Time and Expense Records

- 14-4 UE Data Collection (TEA 4)
    - 14-4.1 Conduct Advance Contact for GQs and TLs (TEA 4)
        - 14-4.1.1 Assign Advance Contact Work Assignments
        - 14-4.1.2 Conduct GQ Advance Contact
            - 14-4.1.2.1 Attempt GQ Advance Contact
            - 14-4.1.2.2 Collect GQ Advance Contact Information
            - 14-4.1.2.3 Update GQ Advance Contact Status
        - 14-4.1.3 Conduct TL Advance Contact
            - 14-4.1.3.1 Attempt TL Advance Contact
            - 14-4.1.3.2 Collect TL Advance Contact Information
            - 14-4.1.3.3 Update TL Advance Contact Status
    - 14-4.2 Conduct GQ Enumeration – eResponse Transfer (TEA 4)
        - 14-4.2.1 Request and Receive eResponse File from GQ Administrator
        - 14-4.2.2 Conduct Verification of eResponse File
        - 14-4.2.3 Perform Data Quality Checks and Calculations
        - 14-4.2.4 Closeout Case
    - 14-4.3 Conduct UE Production (TEA 4)
        - 14-4.3.1 Receive TEA 4 UE Production Work Assignment
        - 14-4.3.2 Perform TEA 4 UE Production Canvassing (80.30.20-80.30.40)
        - 14-4.3.3 Enumerate Group Quarters or Transitory Location in TEA 4
            - 14-4.3.3.1 Enumerate Group Quarters
                - 14-4.3.3.1.1 Enumerate GQ with In-Person Interview
                - 14-4.3.3.1.2 Enumerate GQ with Paper Response Data File
                - 14-4.3.3.1.3 Review and Complete GQ Response
            - 14-4.3.3.2 Enumerate Transitory Location
        - 14-4.3.4 Enumerate Housing Unit in TEA 4
            - 14-4.3.4.1 Attempt Interview
            - 14-4.3.4.2 Enumerate Housing Unit
            - 14-4.3.4.3 Enumerate Housing Unit Via Proxy Interview
            - 14-4.3.4.4 Verify Housing Unit Vacancy Via Proxy
        - 14-4.3.5 Record Time and Expense Daily for TEA 4 Work
        - 14-4.3.6 Review TEA 4 Completed Work and Time and Expense Records
        - 14-4.3.7 Perform Quality Assurance Activities for TEA 4

        - 14-4.3.8 Deliver TEA 4 Completed Work and Time and Expense Records

- 14-5 Paper Field Materials at ACO
    - 14-5.1 Receive Completed Work and Time and Expense Records at ACO
    - 14-5.2 Process Time and Expense Records
    - 14-5.3 Process Questionnaires
    - 14-5.4 Check-In Address Registers and Maps
    - 14-5.5 Process Paper Response Data File
    - 14-5.6 Check Out and Ship Paper Field Materials

- 14-6 Paper Field Materials at NPC
    - 14-6.1 Receive Completed Paper Field Materials at NPC
    - 14-6.2 Process Paper Maps and Address Registers
    - 14-6.3 Process GQ Paper Response Data File (TEA 4 Only)

- 14-7 UE Operation Closeout