

2020 Census Systems Update

Presentation to the Census Scientific Advisory Committee

March 30, 2017

2020 Census Systems Readiness

Agenda

2017 Census Test Solution Architecture

Status of Systems Supporting the 2017 Census Test

2018 End-To-End Census Test Solution Architecture

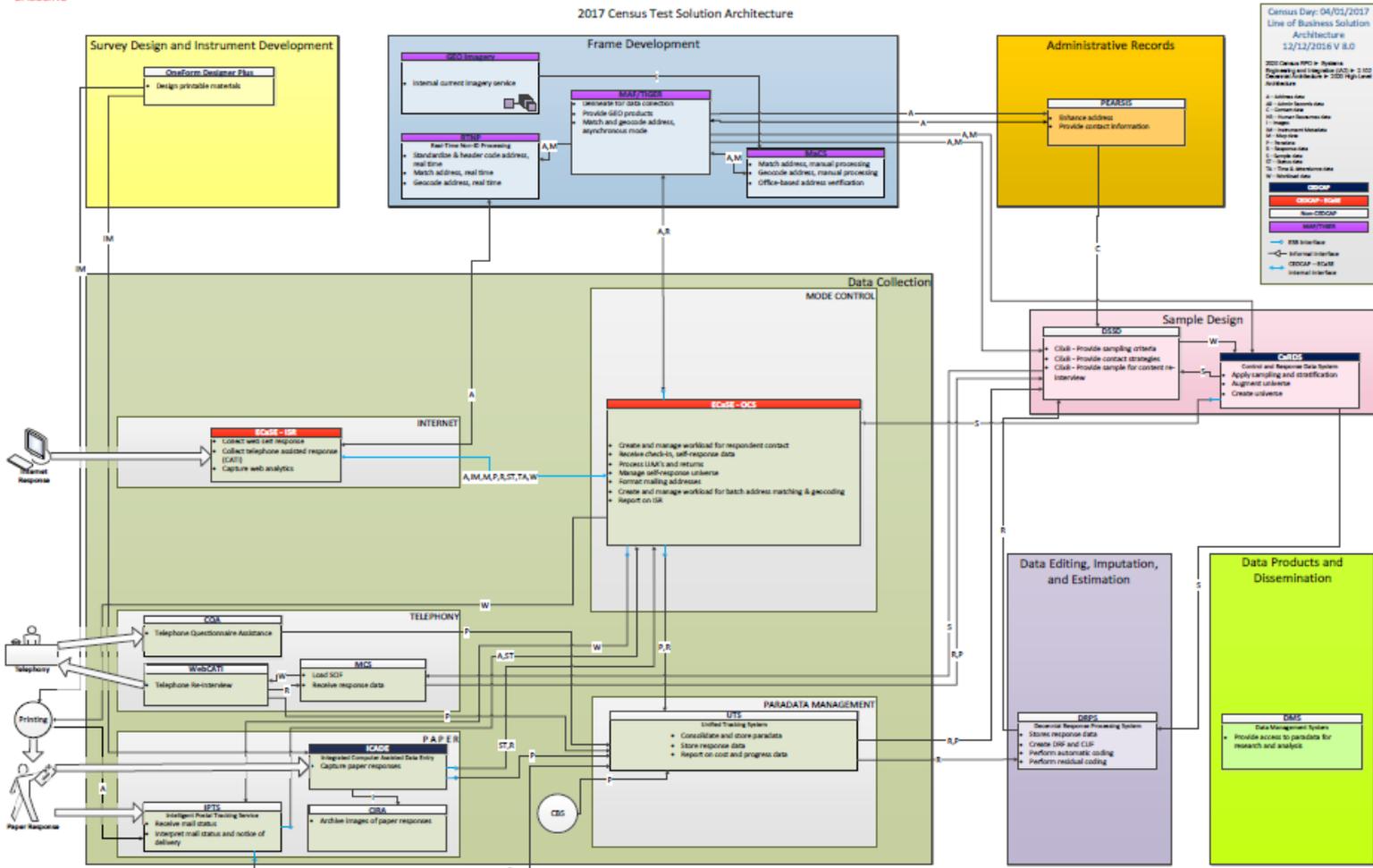
Status of Systems Supporting the 2018 End-To-End Census Test

Demo of Internet Self-Response (ISR) System

2020 Census Systems Readiness

2017 Census Test Solution Architecture

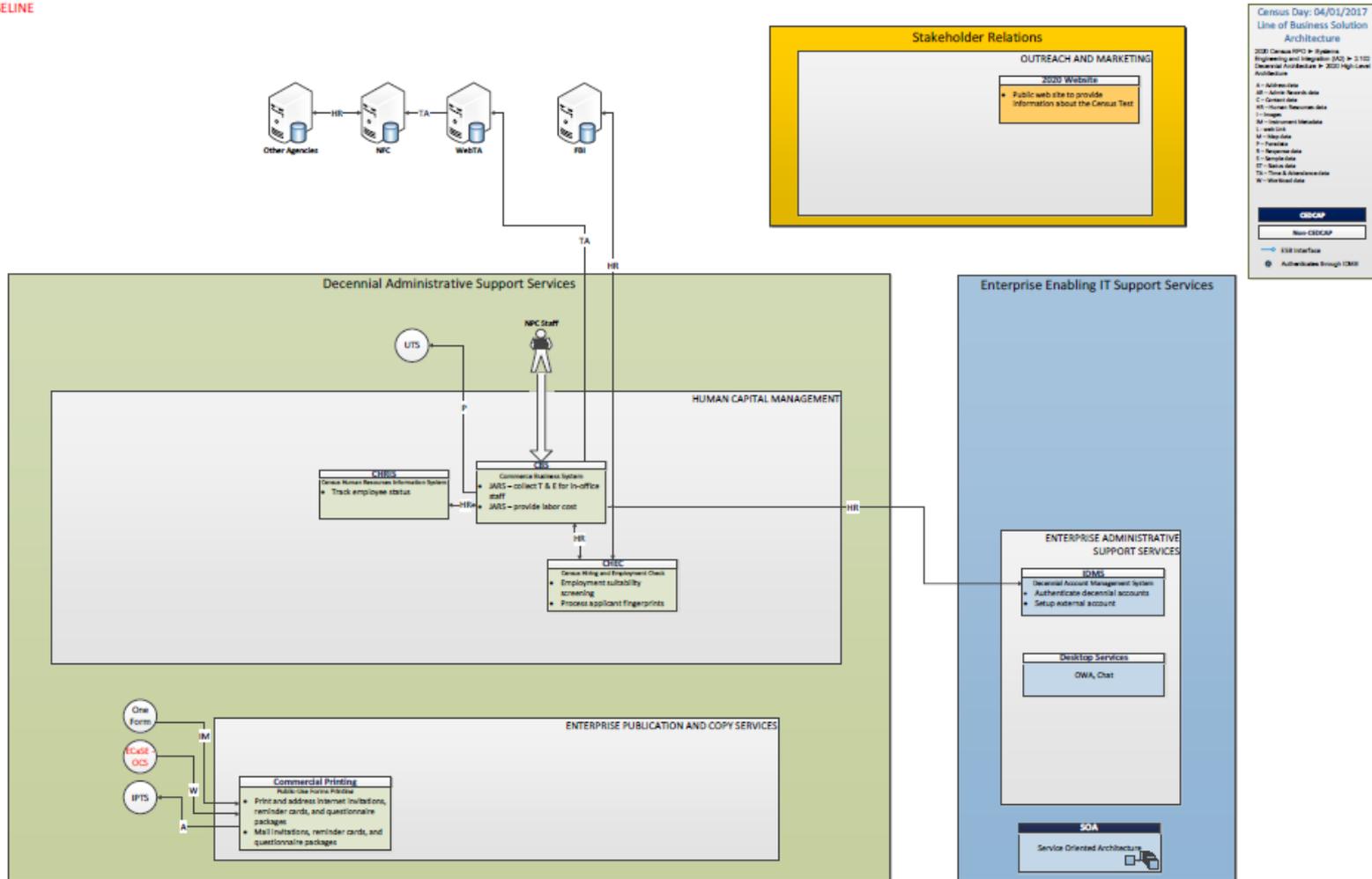
BASELINE



2020 Census Systems Readiness

2017 Census Test Solution Architecture (continued)

BASELINE



2020 Census Systems Readiness

2017 Census Test Systems

System	Key Efforts/Updates required for 2017 Census Test
2020 Website	Enhance and deploy in support of the 2017 Census Test IPC operation.
One Form Designer Plus	As-Is system, no functionality updates are required for its 2017 baseline scope.
IPTS (Intelligent Postal Tracking System)	Deploy with appropriate interfaces in support of the 2017 Census Test Self-Response operation.
DSSD	Develop and deploy in support of the 2017 Census Test Self-Response operation.
MAF/TIGER (Master Address File/Topologically Integrated Geographic Encoding and Referencing Database)	Create and deliver address list for sampling. Provide geospatial services for response processing.
RTNP (Real Time Non-ID Processing)	Verify cloud deployment in the production environment in support of the non-id self-response operation.

2020 Census Systems Readiness

2017 Census Test Systems (continued)

System	Key Efforts/Updates required for 2017 Census Test
CQA (Census Questionnaire Assistance)	Complete testing of the interfaces with 2017 Census Test systems and deploy in support of the Self-Response operation.
MaCS (Matching and Coding Software)	Finalize and test the developed capabilities and deploy in support of the non-id processing operation.
GEO Imagery	As-Is system, no functionality updates are required for its 2017 baseline scope.
DRPS (Decennial Response Processing System)	Finalize and test the developed capabilities and deploy in support of response processing operation. Achieved ATO for the 2017 Census Test.
Web-CATI, MCS	As-Is system. Support telephony-based Coverage Re-interview.
PEARSIS (Production Environment for Administrative Records Staging, Integration and Storage)	Test the developed capabilities and deploy in support of response processing operation.
UTS (Unified Tracking System)	Complete the development of reports and enhancements, and deploy in support of 2017 Census Test.

2020 Census Systems Readiness

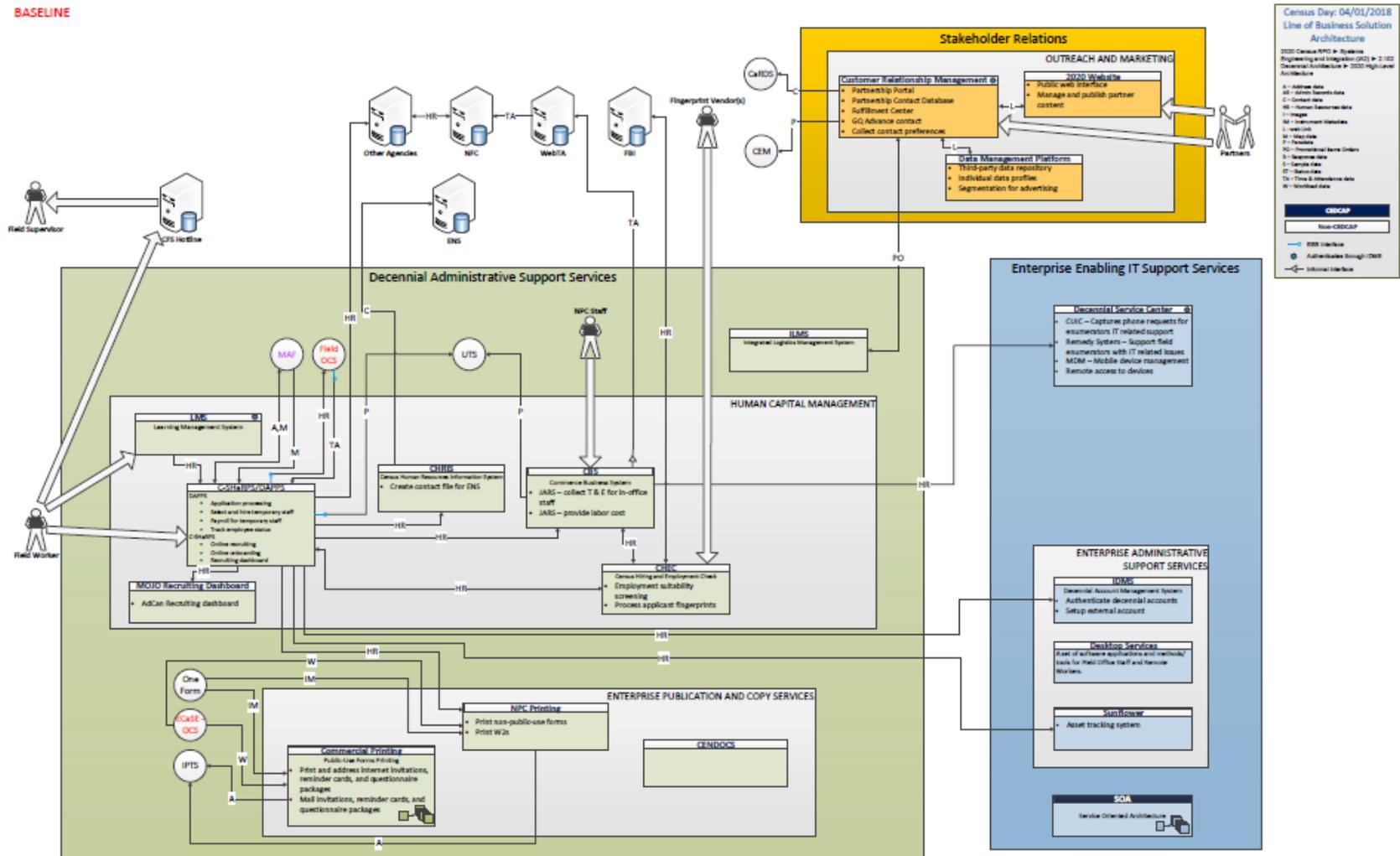
2017 Census Test Support Systems

System	Key Efforts/Updates required for 2017 Census Test
CBS (Commerce Business System)	As-Is system, no functionality updates are required for its 2017 baseline scope.
CHEC (Census Hiring and Employment Check System)	As-Is system, no functionality updates are required for its 2017 baseline scope.
CHRIS (Census Human Resources Information System)	As-Is system, no functionality updates are required for its 2017 baseline scope.
CIRA (Census Image Retrieval Application)	As-Is system, no functionality updates are required for its 2017 baseline scope.
Commercial Printing	Awarded to a GSA vendor. Develop interface with 2017 Census Test systems. Achieve ATO.
IDMS (Identity Management System)	As-Is system, no functionality updates are required for its 2017 baseline scope.
DMS (Data Management System)	As-Is system, no functionality updates are required for its 2017 baseline scope.
Desktop Services	As-Is system, no functionality updates are required for its 2017 baseline scope.

2020 Census Systems Readiness

2018 End-To-End Census Test Solution Architecture (continued)

BASELINE



2020 Census Systems Readiness

2018 End-to-End Census Test Systems

System	Key Efforts/Updates required for 2018/2020
2020 Website	Develop enhancements and deploy in support of the 2018 End-to-End Census Test IPC operation. Possible scalability updates are required to support 2020.
CEDSCI (Center for Enterprise Dissemination Services and Consumer Innovation)	Establish interfaces with 2018 End-to-End Census Test. Continue development and test of functionality.
CEM (Customer Experience Management)	Develop enhancements and deploy in support of the 2018 End-to-End Census Test IPC operation. Possible scalability updates are required to support 2020.
CM Clerical Match and Map (Coverage Measurement – Clerical Matching System and Map Update)	Develop, test and deploy functionality in support of 2018 End-to-End Census Test Coverage Measurement (CM) operation.
CM Imputation and Estimation (Coverage Measurement – Imputation and Estimation System)	Develop, test and deploy functionality in support of 2018 End-to-End Census Test Coverage Measurement (CM) operation.
CM PCS (Coverage Measurement – Processing and Control System)	Develop, test and deploy functionality in support of 2018 End-to-End Census Test Coverage Measurement (CM) operation.
CRM (Customer Relationship Management)	Update platform and develop enhancements. Deploy in support of 2018 End-to-End Census Test IPC operation. Possible scalability updates are required to support 2020.

2020 Census Systems Readiness

2018 End-to-End Census Test Systems (continued)

System	Key Efforts/Updates required for 2018/2020
CQA (Census Questionnaire Assistance)	Establish interfaces with 2018 End-to-End Census Test systems. Develop and deploy in support of the 2018 End-to-End Census Test Self-Response operation. Scalability updates are required to support 2020 Census.
C-SHaRPS (Census Schedule A Hiring, Recruiting and Payroll System)	Develop and deploy for 2018 End-to-End Census Test. C-SHaRPS contract awarded October 2016.
DAPPS (Decennial Applicant, Personnel and Payroll Systems)	Develop and deploy interface with C-SHaRPS for 2018 End-to-End Census Test. Enumeration Recruiting Release and Benefits implementation is complete. DAPPS is supporting 2018 End-to-End Census Test Recruiting.
IPTS (Intelligent Postal Tracking System)	Technical Integrator completed IPTS assessment and provided recommendations for 2018/2020 postal-tracking solution.
LMS (Learning Management System)	Leveraged existing C-SHaRPS BPA and acquisition is underway. LMS contract expected to be awarded March 2017.
MAF/TIGER (Master Address File/Topologically Integrated Geographic Encoding and Referencing Database)	Develop and deploy collection geographies. Provide address and geospatial services for all operations. Initial geography for the 2018 End-to-End Census Test is deployed.

2020 Census Systems Readiness

2018 End-to-End Census Test Systems (continued)

System	Key Efforts/Updates are required for 2018/2020
DRPS (Decennial Response Processing System)	Develop enhancements and deploy in support of response processing operation. Scalability updates are required to support 2020 Census.
MOJO (Recruiting Dashboard)	As-Is system. Deploy for 2018 End-to-End Census Test recruiting effort.
PEARSIS (Production Environment for Administrative Records Staging, Integration and Storage)	Continue development, test and deploy in support of 2018 End-to-End Census Test.
RTNP (Real Time Non-ID Processing)	Verify cloud deployment in the production environment in support of the self-response operation. Scalability updates are required to support 2020 Census.
SMaRCS (Sampling, Matching, Reviewing, and Coding System)	Develop enhancements and deploy in support of the 2018 End-to-End Census Test operation.
Tabulation (Decennial Tabulation System)	Establish interface with 2018 End-to-End Census Test systems, develop and deploy enhancements required to support the 2018 End-to-End Census Test. Completed initial test using 2010 data/volumes.
UTS (Unified Tracking System)	Develop scalability enhancements and deploy in support of 2018 End-to-End Census Test.

2020 Census Systems Readiness

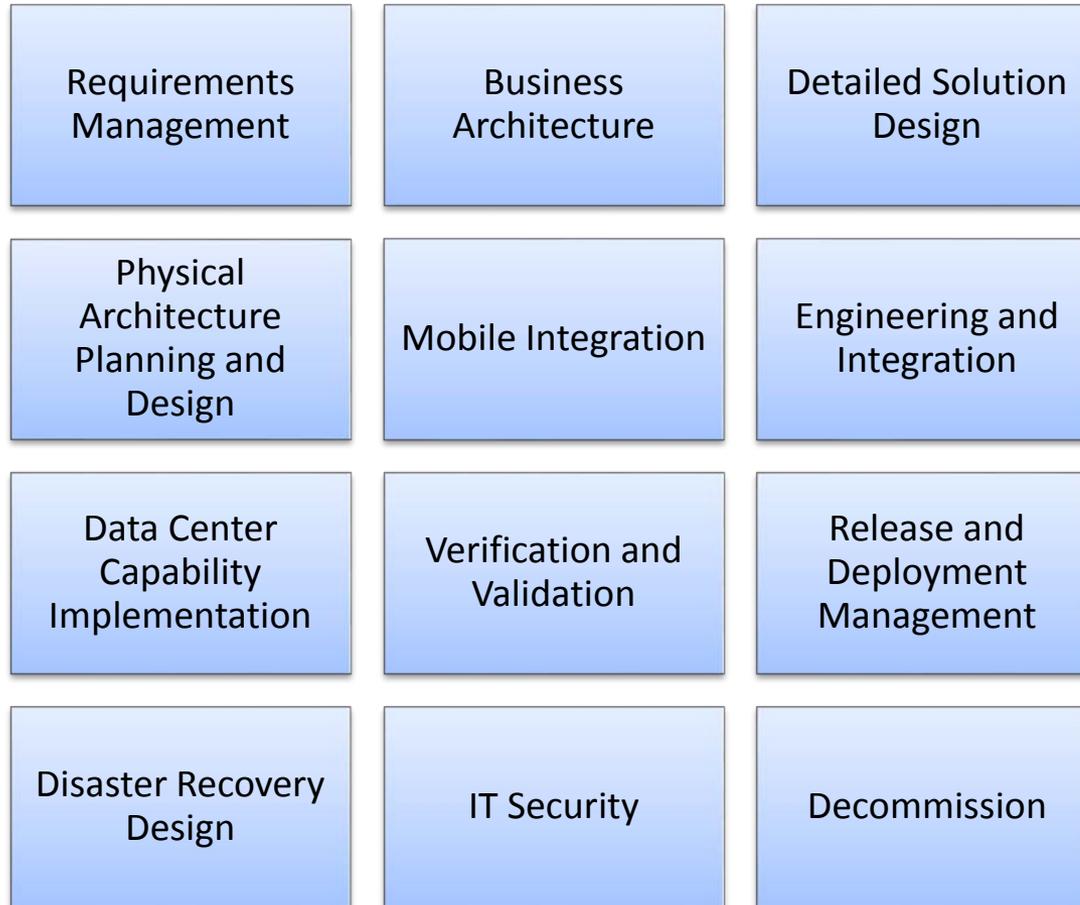
2018 End-To-End Census Test Support Systems

System	Key Efforts/Updates required for 2018/2020
CBS (Commercial Business System)	As-Is system, no functionality updates are required for its 2018/2020 baseline scope. Some updates may be required when interfacing systems (such as DAPPS) migrate to the cloud.
CENDOCS (Census Document System)	As-Is system, no functionality updates are required for its 2018/2020 baseline scope.
CHEC (Census Hiring and Employment Check System)	Third party vendor interface needs to be implemented once the fingerprinting contract is awarded. Scalability updates are required to support 2020 Census.
CHRIS (Census Human Resources Information System)	As-Is system, no functionality updates are required for 2018/2020 baseline scope. Some updates may be required when interfacing systems (such as DAPPS) migrate to the cloud.
CIRA (Census Image Retrieval Application)	As-Is system, no functionality updates are required for its 2018/2020 baseline scope. Scalability updates are required to support 2020 Census.
Commercial Printing	Award to a GSA vendor. Develop interface with 2018 End-to-End Census Test systems.
IDMS (Identity Management System)	As-Is system, no functionality updates are required for its 2018/2020 baseline scope. Scalability updates are required to support 2020 Census. Integrate with TI environment.
ILMS (Integrated Logistics Management System)	Finalize baseline scope. Develop interface with 2018 End-to-End Census Test systems in support of IPC. Possible scalability updates are required to support 2020.
NPC Printing (Printing at the National Processing Center)	As-Is system, no functionality updates are required for its 2018/2020 baseline scope.
Sunflower	As-Is system, no functionality updates are required for its 2018/2020 baseline scope.

2020 Census Systems Readiness

2020 Census Technical Integrator (TI) Contract

The Technical Integration contract provides for services in the following areas:



2020 Census Systems Readiness

Team T-Rex

Company

Capabilities



Decennial Experts Intimate with 2020 Census: Large data capture system experience from six national censuses and comprehensive understanding of 2020 Program Requirements.



Experienced Innovators: CTA partner and large IT-centric performance of mission-critical enterprise survey data capture and dissemination systems.



Decennial Experts & Experienced Innovators: Prime contractor for six national censuses, great depth and 26,000 highly skilled IT professionals



Experienced Innovators, Pega and Security Experts: Innovated and simplified the technical plumbing of HealthCare.gov; deployed security infrastructure in AWS Cloud; 1,259 PEGA certified specialists ready to assist



Decennial Experts & Deployment Specialists: Experience from two Decennial Censuses in the areas of infrastructure deployment, system operations, and telephony.



Decennial Experts Intimate with 2020 Census: Six national censuses and comprehensive understanding of 2020 Census program gained from Census SE&I MSS Prime Contract.



Census SME Experts: Specializes in technical writing, development, and enterprise infrastructure architecture for the USCB



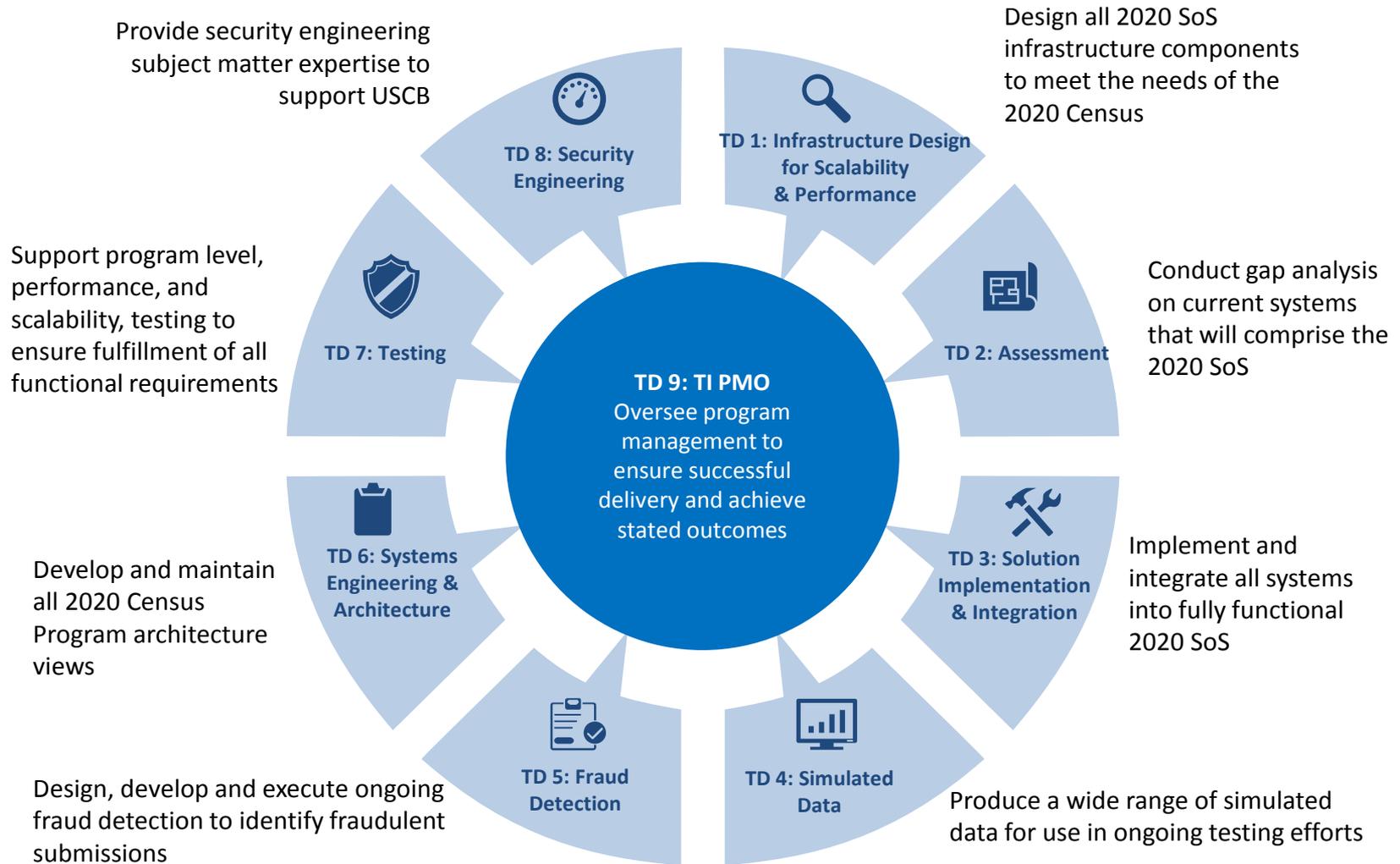
Decennial Experts Intimate with 2020 Census: Experience from six national censuses and experts in Integration and Test of multi-mode census systems.



Census Experts: Long-term partner to USCB providing IT and systems integration services to ECON and ADIT.

2020 Census Systems Readiness

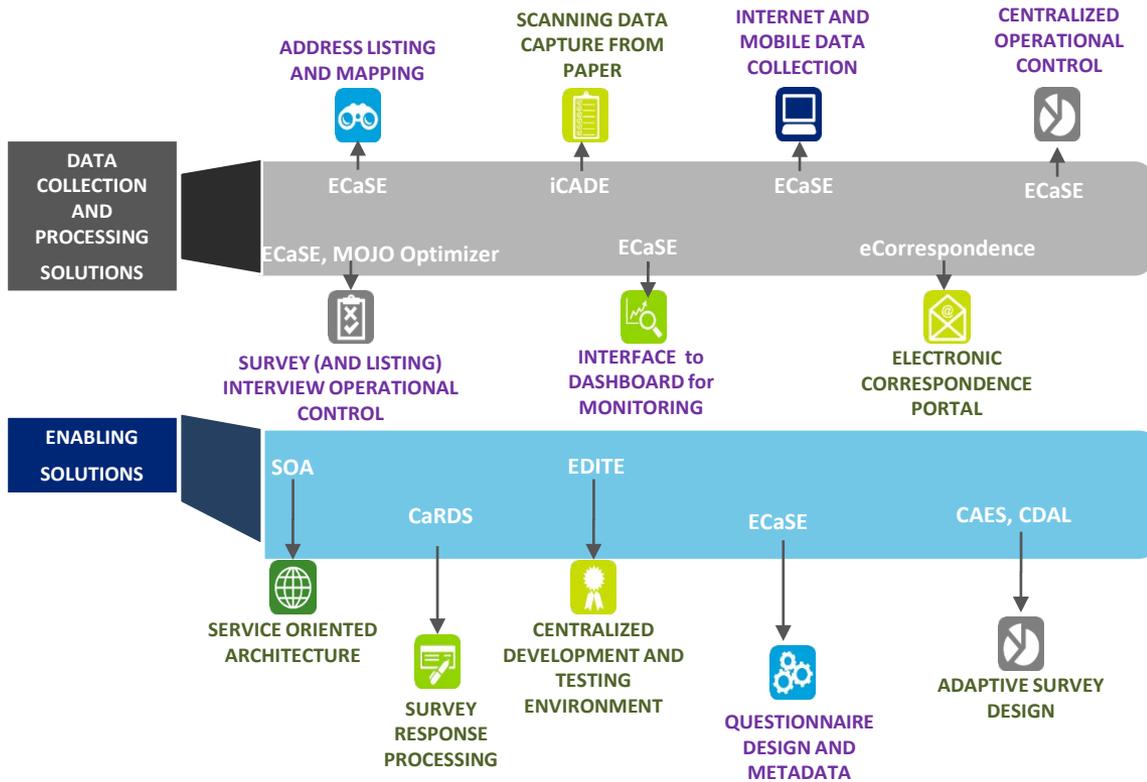
Overview of 2020 Census TI Technical Directives



2020 Census Systems Readiness

Census Enterprise Data Collection and Processing (CEDCaP) Capabilities and Solutions

CEDCaP is comprised of delivery of enterprise capabilities and the solutions to provide those capabilities.



Capabilities shown in purple will be provided by the Enterprise Censuses and Surveys Enabling (ECaSE) Platform

Census Enterprise Data Collection & Processing (CEDCaP)

CEDCaP Data Collection & Processing Capabilities and Solutions Delivered:	
CEDCaP Capability	CEDCaP Solution
1) Centralized Development and Testing Environment to CEDCaP projects	Enterprise Development, Integration, & Test Environment (EDITE)
2) Service Oriented Architecture for CEDCaP projects (i.e., common infrastructure and efficient system interfaces to allow IT applications to communicate without the need for costly system re-writes)	Application Programming Interface (API) Infrastructure (API-I)
3) Centralized Operational Analysis and Control and Adaptive Survey Design capability, including statistical modeling and administrative records	ECaSE Operational Control System Census-Data Access Layer (C-DAL) Concurrent Analysis and Estimation System (CAES)
4) Survey (and Listing) Interview Operational Control	ECaSE Operational Control System MOJO Optimizer
5) Address Listing and Mapping	ECaSE Address Listing Mapping
6) Interface to the Dashboard for Monitoring Survey Cost, Progress, and Quality and Enterprise Paradata Repository	ECaSE
7) Questionnaire Design and Metadata	ECaSE- Questionnaire Design Metadata
8) Internet and Mobile Data Collection	ECaSE Internet Self Response ECaSE – Enumeration
9) Electronic Correspondence Portal	eCorrespondence
10) Scanning Data Capture from Paper	Integrated Computer Assisted Data Entry (ICADE)
11) Survey Response Processing	CARDS (Pre-data collection, TBD) (Post-data collection processing)

2020 Census Systems Readiness

CEDCaP Systems

CEDCaP System	Key Efforts/Updates required for 2018/2020
CaRDS (Control and Response Data System) (2017 Census Test and 2018 End-to-End Test)	Develop enhancements to functionality that supported the 2015 and 2016 Census Tests. Deploy in support of Census Universe Creation for 2017 Census Test and 2018 End-to-End Census Test. Scalability updates are required to support 2020.
iCADE (Integrated Computer Assisted Data Entry System) (2017 Census Test and 2018 End-to-End Test)	Develop enhancements to legacy system that supports current surveys and the 2015 and 2016 Census test. Deploy in support of paper data capture operation for 2017 Census test and 2018 End-to-End Census Test. Scalability updates are required to support 2020.
SOA (Service Oriented Architecture) (2017 Census Test and 2018 End-to-End Test)	Develop enhancements to production system to support interfaces between ECaSE in the Cloud and those systems not in the Cloud.
ECaSE (Enterprise Censuses and Surveys Enabling) (2017 Census Test and 2018 End-to-End Test)	Complete the configuration of Internet Self-Response and Operational Control functionality to support the 2017 Census Test and Address Listing and Enumeration instruments for the 2018 End-to-End Census Test. Scalability updates are required to support 2020.
CAES (Concurrent Analysis and Estimation) (2018 End-to-End Test)	Conduct tests, finalize 2020 Census models that will run on CAES, and obtain an ATO in order to support the 2018 End-to-End Census Test.

Internet Self-Response

Demonstration

Census Questionnaire Assistance

Agent Desktop Demonstration



Lam Nguyen

Technical Lead, CQA PMO

United States™
Census
2020

GENERAL DYNAMICS
Information Technology



Danielle Copsetta

Agent Desktop Demo, GDIT/IBM



Tim Fauber

Management Reporting System Demo, GDIT/IBM

Census Questionnaire Assistance

Overview



Respondents

Contact Census
Questionnaire Assistance call
centers for assistance



Census Questionnaire Assistance (CQA)

Provide assistance via self-
service and/or customer
service representatives

Census Questionnaire Assistance Overview

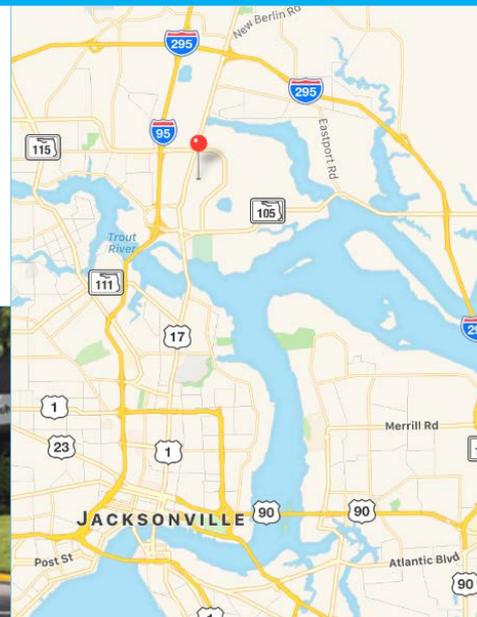


Response

Contact Call
Questionnaire Assistance
centers for assistance

Jacksonville, FL Call Center

- One Imeson Park Boulevard
Jacksonville, FL 32118
- 90 customer service
representatives for 2017
- English and Spanish



Census Questionnaire Assistance Overview

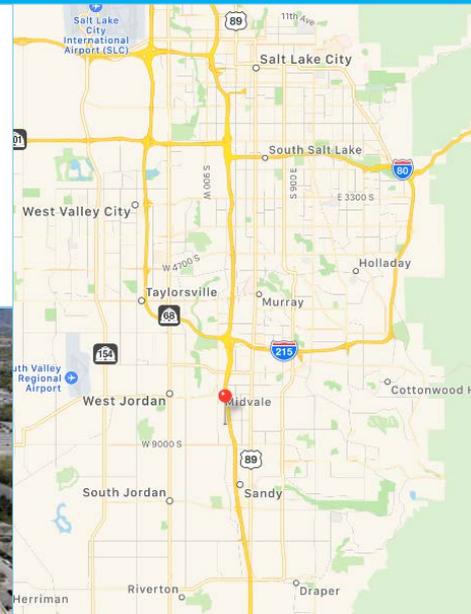


Response

Contact Call
Questionnaire Assistance
centers for assistance

Sandy, UT Call Center

- 8475 S. Sandy Pkwy
Sandy, Utah 84070
- 70 customer service
representatives for 2017
- English and Non-Spanish
languages



Census Questionnaire Assistance

Overview



Respondents

Contact Census Questionnaire Assistance call centers for assistance



Census Questionnaire Assistance (CQA)

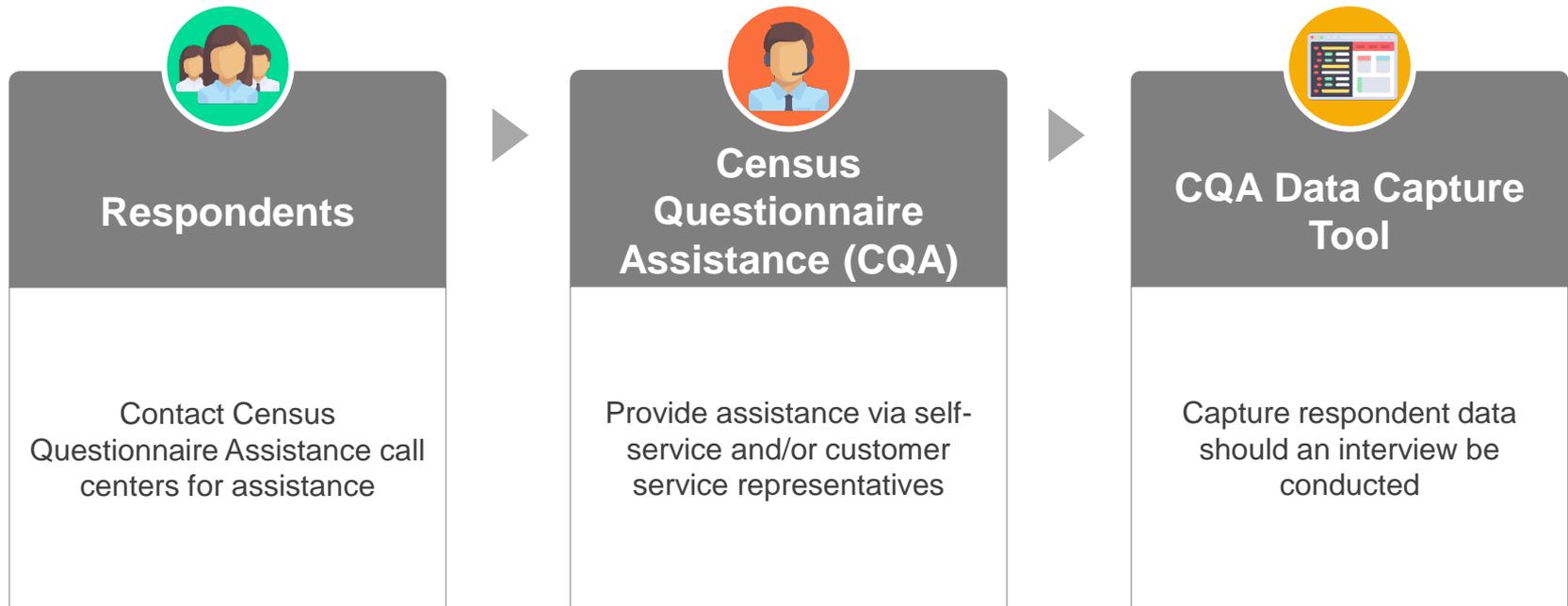
Provide assistance via self-service and/or customer service representatives

Supported Languages

- English
- Spanish
- Chinese (Mandarin & Cantonese)
- Vietnamese
- Korean
- Russian
- Arabic

Census Questionnaire Assistance

Overview



Inside Census Questionnaire Assistance



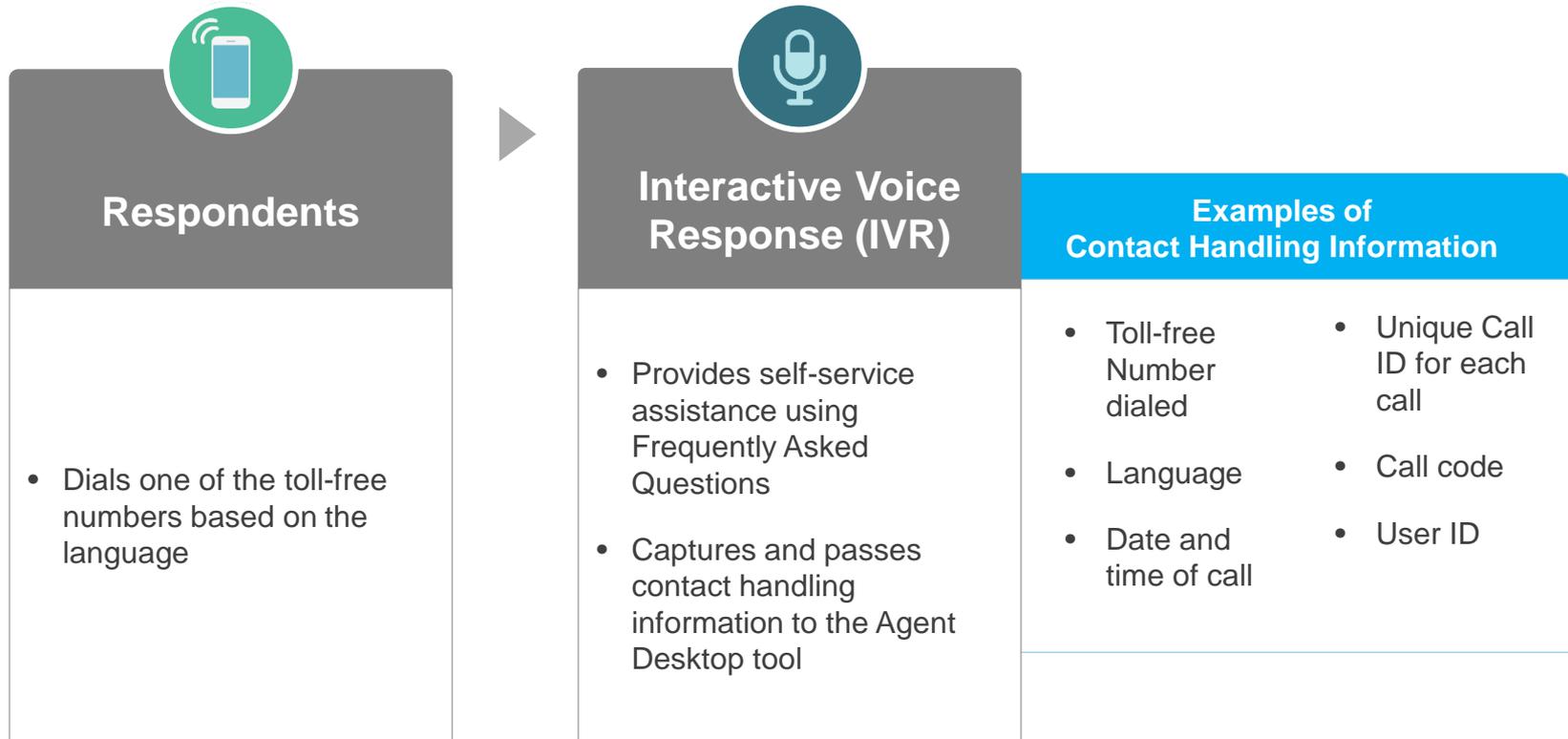
Respondents

- Dials one of the toll-free numbers based on the language

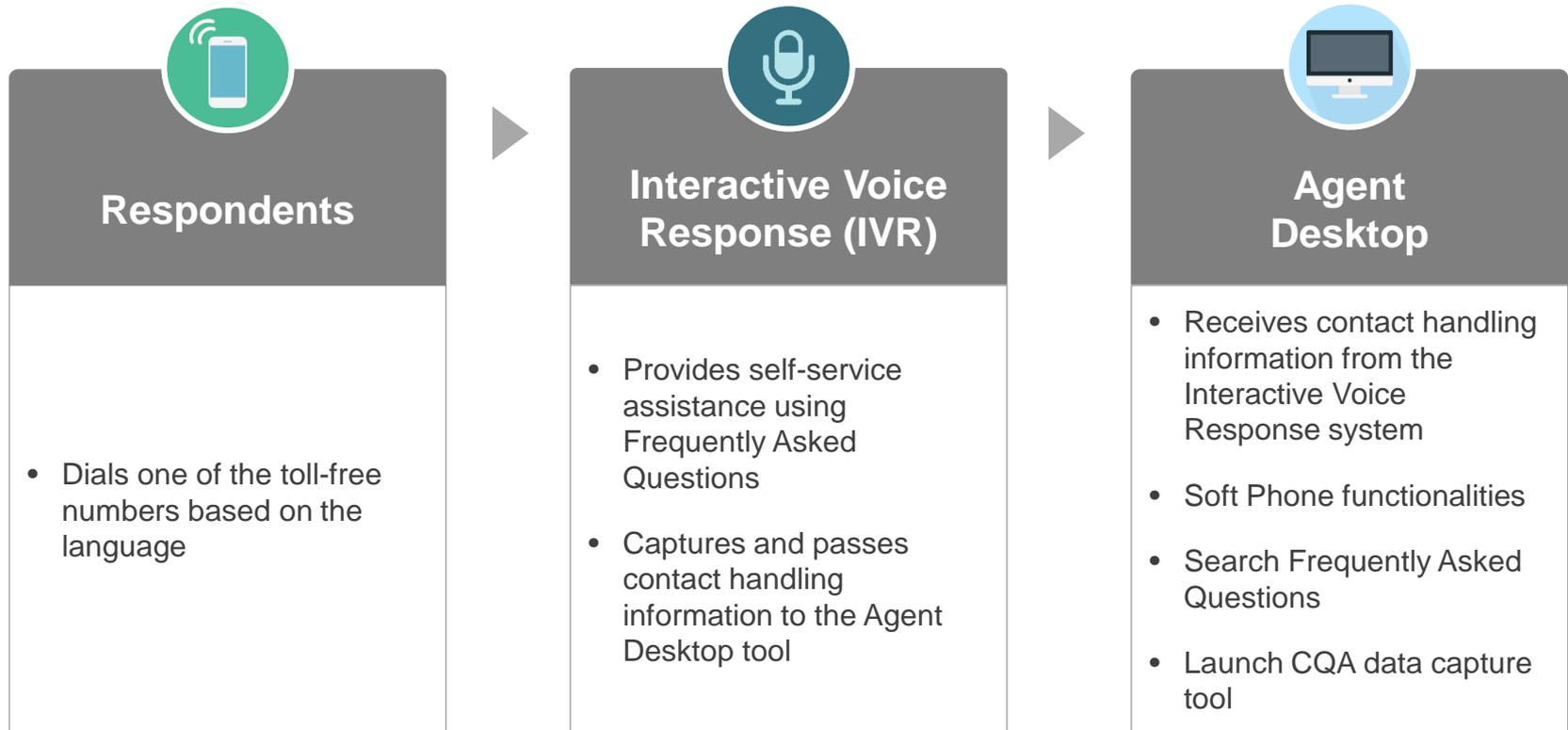
Toll-Free Numbers for Supported Languages

- 844-xxx-2020 (English)
- 844-xxx-2020 (Spanish)
- 844-xxx-2020 (Mandarin)
- 844-xxx-2020 (Cantonese)
- 844-xxx-2020 (Vietnamese)
- 844-xxx-2020 (Korean)
- 844-xxx-2020 (Russian)
- 844-xxx-2020 (Arabic)
- 844-xxx-2020 (TDD)

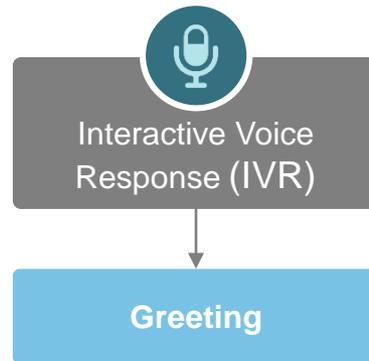
Inside Census Questionnaire Assistance



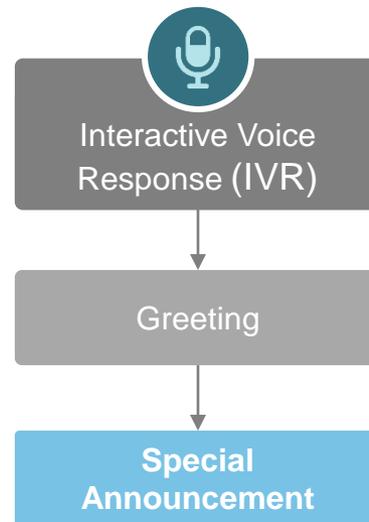
Inside Census Questionnaire Assistance



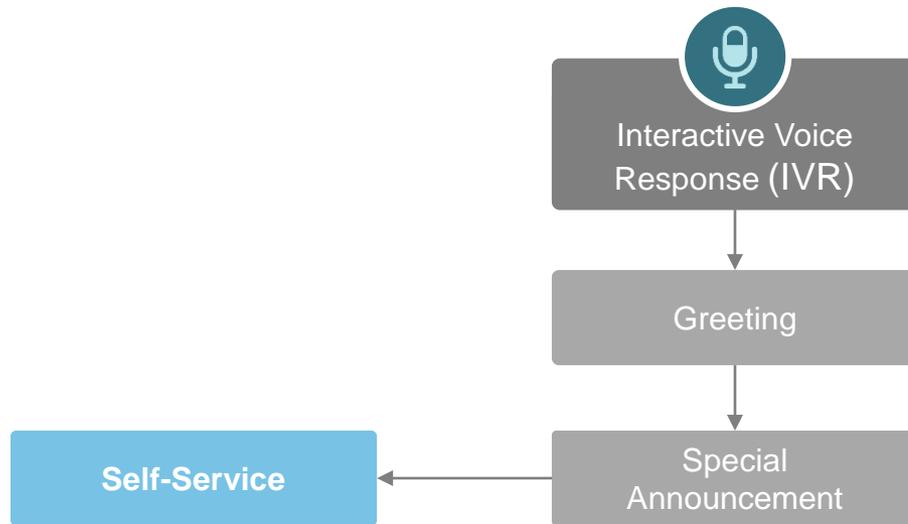
Inside the Interactive Voice Response



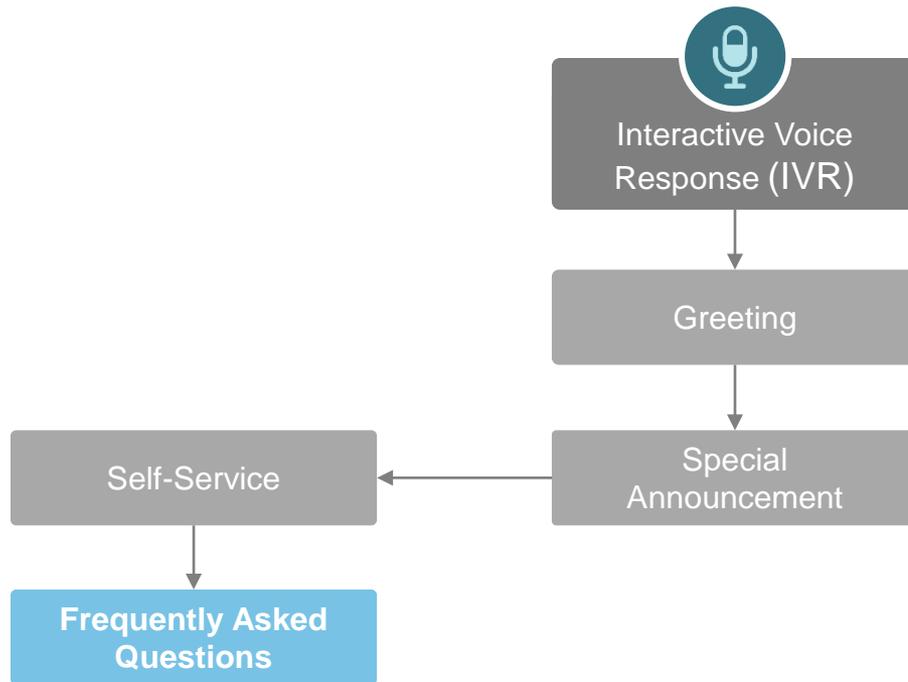
Inside the Interactive Voice Response



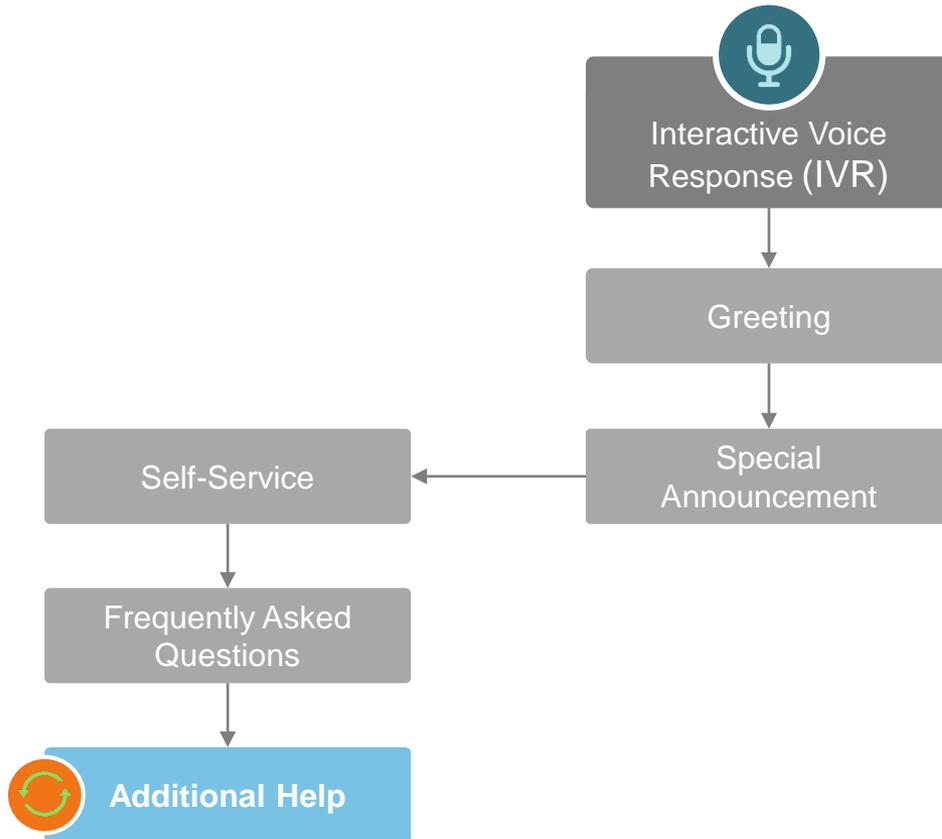
Inside the Interactive Voice Response



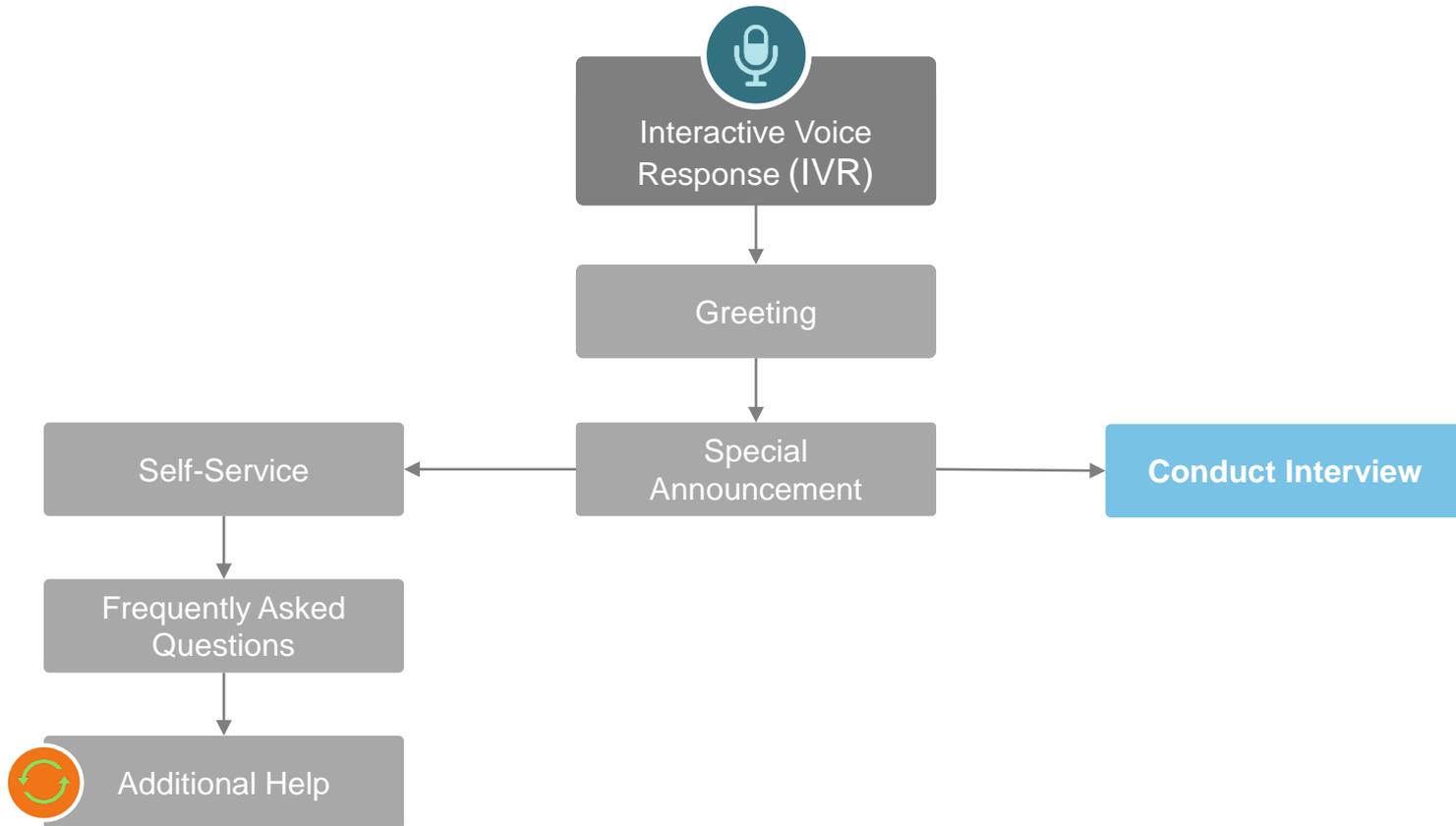
Inside the Interactive Voice Response



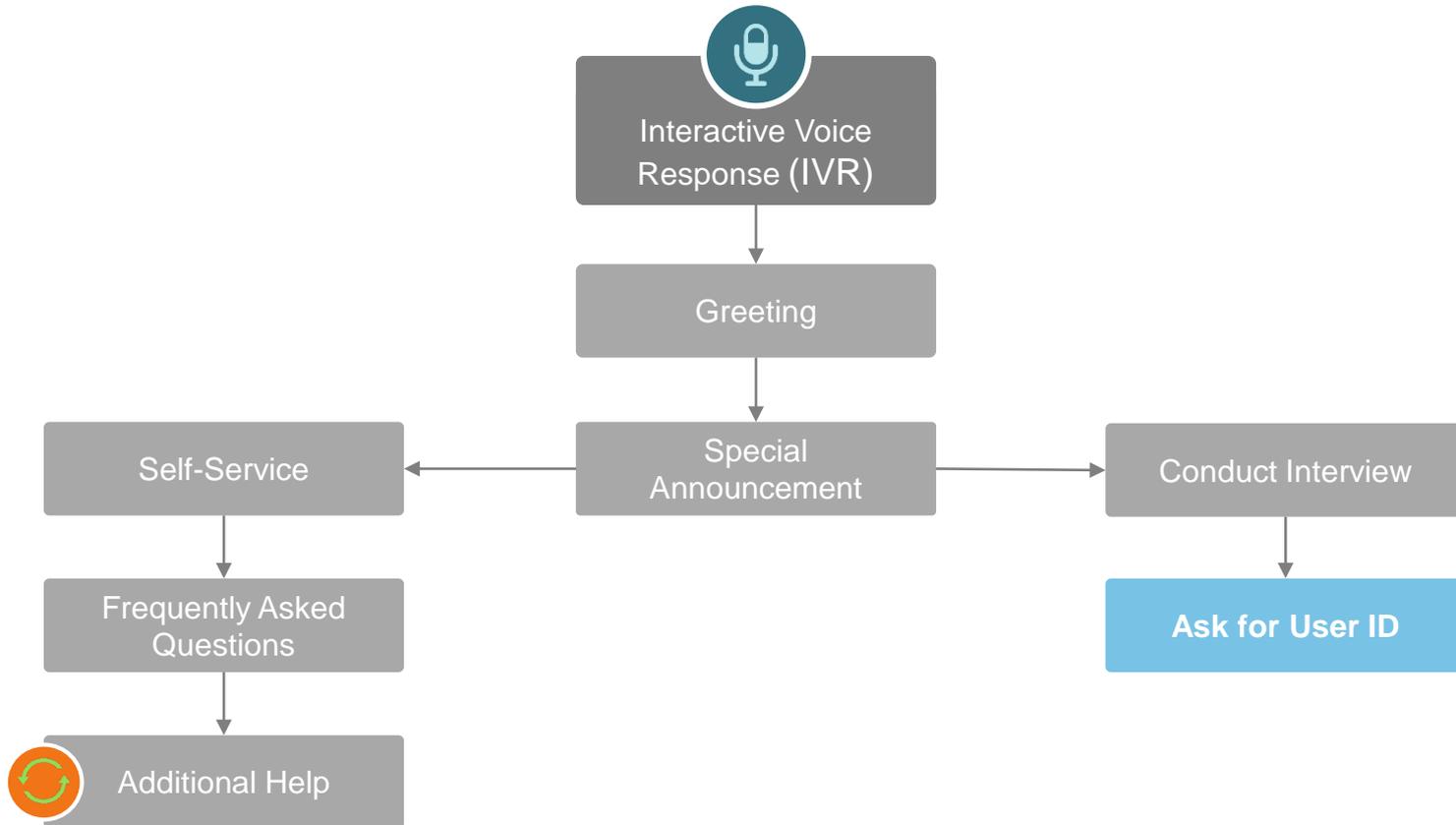
Inside the Interactive Voice Response



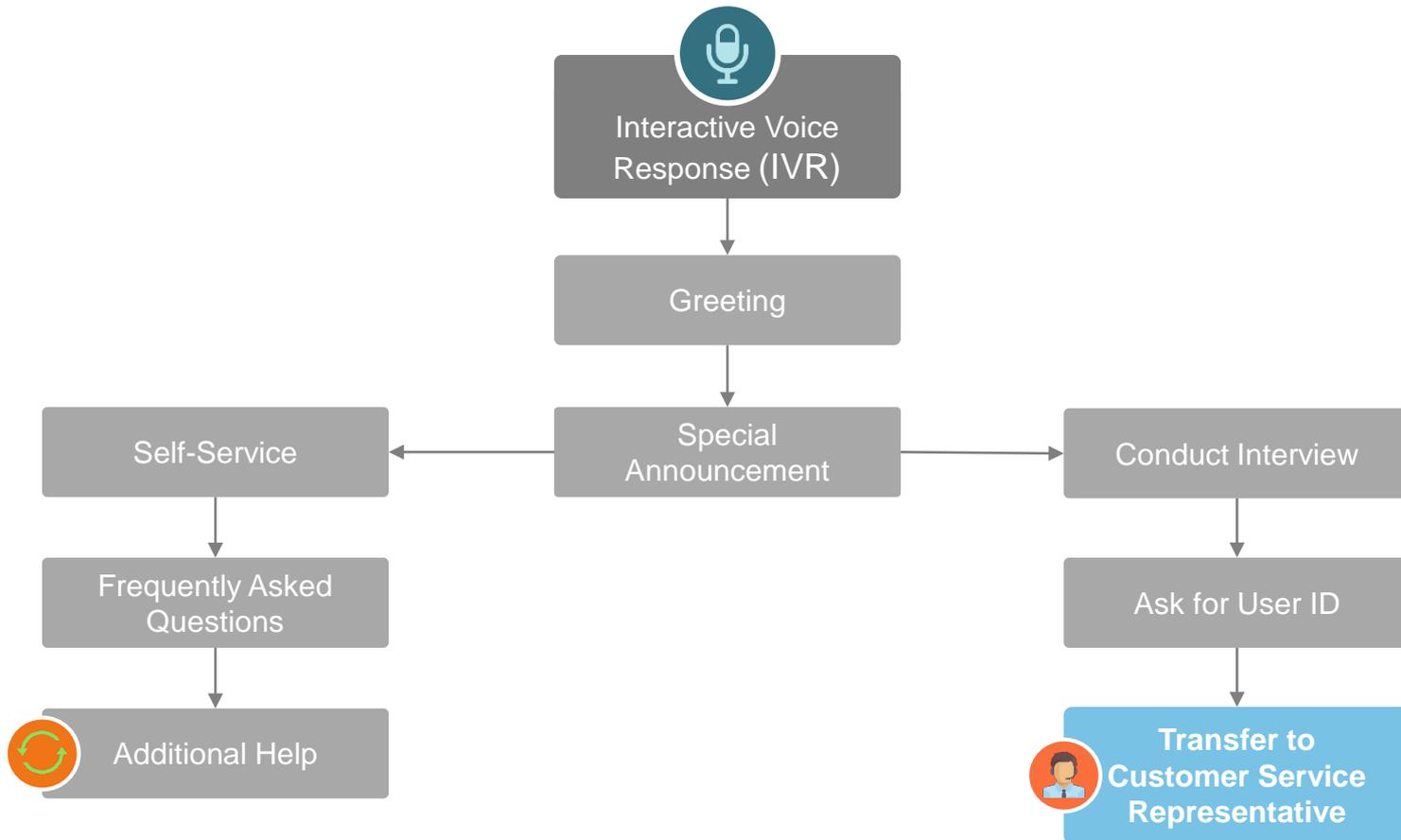
Inside the Interactive Voice Response



Inside the Interactive Voice Response



Inside the Interactive Voice Response



Demonstration Time

Contact Handling Flow





Thank You