

2020 NRFU Field Operational Control System and Quality

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United States[®]
Census
2020

2020 FOCS, Hermes, Optimizer

FOCS and its companion applications MOJO Hermes and MOJO Route Optimizer were used to manage field operations

- **FOCS**
 - Control system used to communicate assignments to the device, manage staff, approve time and expense, generate and resolve alerts
- **MOJO Hermes**
 - Field reporting system
 - Pre-computes reports every 10 minutes
- **MOJO Route Optimizer**
 - Generate optimized assignments
 - Generate alerts that are more computational

FOCS

- Built in Pega Framework
- Clustered by ACO (248 FOCS clusters for peak operations)
- Staff management
 - Time and expense approval by managers
 - Alert resolution
 - Work availability review
- Case management
 - Assign cases to people
 - Generate on-demand optimizer assignments
 - Supervisor review

MOJO Hermes

- Reporting system built as a companion to FOCS
- Python/Java based
- Reports pre-determined by field
 - Report definitions largely stored in parameterized tables to allow for simple changes to parameters
 - Reports stored in database for fast retrieval by staff
 - Downloadable to CSV

MOJO Route Optimizer

- Used to both generate assignments and to generate alerts
- Python/Java based with ESRI network analyst
- Generated assignments based on work availability each night
 - Goal to optimize work across an entire CFM zone, not for an individual enumerator
 - Uses location of enumerators, cases, work availability, language of case/enumerator, weights on cases for priority
- Generated some of the alerts
 - Using the same ESRI framework, reconstructed the enumerator's day

Optimization Steps

- **Generated assignments based on work availability each night**
- **Regular Assignments**
 - **Geocoding to the road network**
 - **Cache OD Matrix**
 - **Clustering**
 - **Assign Field Workers to Partition**
 - **Vehicle Routing Problem (ESRI)**
- **Phase 2 / Closeout**
 - **Clustering of cases into n groups, where n is number of roughly evenly created groups**
 - **Assign one group per enumerator**

Reporting in Hermes

https://hermes.mojo.ti.census.gov/Hermes/

Mojo

Hermes

adams022

Build Report

NRFU PROGRESS

National

-- Select ACO --

CLEAR

BUILD HQ

NRFU PROGRESS Report, Nationwide

Download CSV

Report generated on Mon Nov 16 2020 08:30:00 GMT-0500 (Eastern Standard Time)

RCC	Active Employees	Employees With Availability	Employees With An Assignment	Total Production Cases	Field Complete Cases	Phone Complete Cases	Self Response Cases	Admin Rec. Occupied Cases	Closed By ACO	Closed By HQ	Manager Visit Closed	Total Cases Complete	Percent Complete	Cases Not Started	Open Cases	Closed Max Attempts	Total Incomplete Cases	Percent Incomplete	Cases In Supervisor Review
Filter RCC	Filter Active E	Filter Emplo	Filter Emplo	Filter Total Pr	Filter Field C	Filter Phone	Filter Self Re	Filter Admin	Filter Clos	Filter Clos	Filter Mana	Filter Total C	Filter Percer	Filter Case	Filter Open	Filter Close	Filter Total Inc	Filter Percent	Filter Cases I
2299		0	0	9,000	7,000	1,000	1,000	1,000	0	0	0	9,000	99%	0	0	0	0	0	0
2399		0	0	9,000	7,000	2,000	8,000	1,000	0	0	0	9,000	99%	0	0	0	0	0	0
2599		0	0	8,000	6,000	2,000	8,000	9,000	0	0	0	8,000	99%	0	0	0	0	0	0
2999		0	0	12,000	9,000	4,000	1,000	1,000	0	0	0	12,000	99%	0	0	0	0	0	0
3199		0	0	11,000	8,000	2,000	1,000	1,000	0	0	0	11,000	99%	0	0	0	0	0	0
3299		0	0	9,000	6,000	1,000	1,000	1,000	0	0	0	9,000	99%	0	0	0	0	0	0
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HQ Total		0	0	6,000	46,000	1,000	6,000	6,000	0	0	0	61,000	99%	0	0	0	0	0	0

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Management by Alerts

- Supervisors and Managers were served alerts about their employees
- Alerts focused on both management of staff and management of work
- Overlap with QC program alerts on purpose – start the quality review during production and continue into the QC program

Management by Alerts

Staff Management

No Timesheet
Potential Overcharge Miles
Potential Overcharge Hours
Lookahead Availability
Payroll Not Approved
No Work
Work Not Started
Working Before Assigned
Hard Fail
Stale Alert

Case Management

Long Distance Flag
Short Interview
High Refusal Rate
Low/High Completed Cases
Unconfirmed Vacant/Delete
by Observation
High Pop 1 Rate
Low/High Attempts per Hour
No Proxy Attempts
Unable to Assign
Ready for Phase 2/Closeout

END