

MAF Enhancement Project/Frames Program Update

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MAF Enhancement Project/Frames Program

The Vision

To create Enterprise-wide frames linkable in nature, agile in structure, accessible for production or research on a need-to-know basis, and that adhere to best practices in terms of technology usage, data management, and methodology.

Linkable in Nature

- Each frame will include the necessary unique identifiers and keys for linkage to each other. For example:
 - Location information (i.e., address and/or longitude/latitude) will be available on each person, job, and business record.
 - A person record may have linkage information for a job.
 - A job record may have linkage information to a business.

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Benefits of the Vision

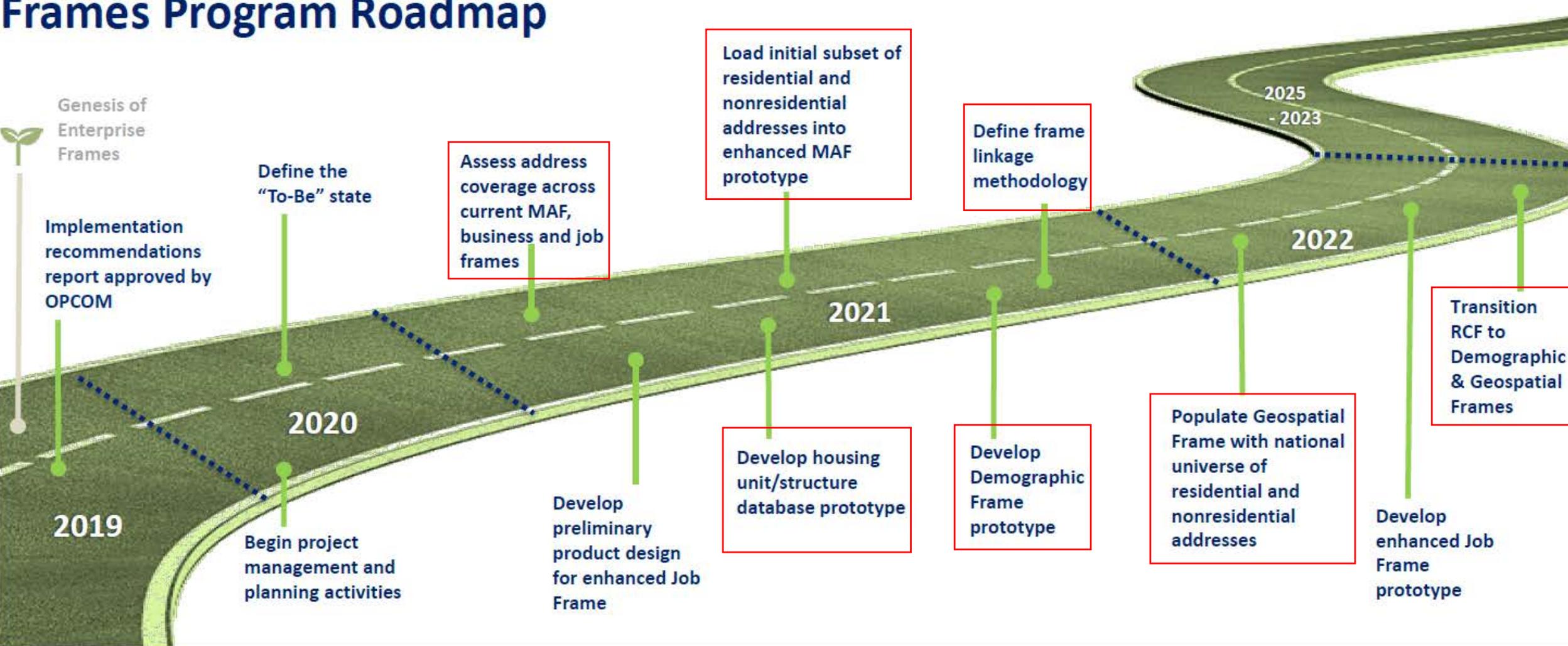
- Fosters an environment to do more work in the office.
 - In-Office Address Canvassing (continuous review, update, and maintenance of the Master Address File).
 - In-Office Enumeration for the 2030 Decennial Census.
- Reduce burden on respondents (individuals and businesses) by re-using data that already exist in one or more frames.
- Reduce duplication, manual efforts, and one-off data cleaning projects.
- Allows more time for production and research.
- Allows for ability to more easily trace data and code through the linked frames, facilitating reproducibility.
- Expands the Census Bureau's ability to report on changes and trends affecting the Nation's population, economy, and communities.

MAF Enhancement Project/Frames Program

FY20 Accomplishments: Laying the Foundation

- Laying the project management foundation in advance of official program status:
 - Developed a roadmap for the future.
 - Prepared “As-Is” documentation for each of the four frames as well as a high-level overview.
 - Drafted “To-Be” documentation for overall Enterprise Frames and for each of the four frames.
 - Drafted vision canvasses, epics, and identified use cases.
 - Identified potential linking keys and scoping potential requirements for linking frames.
 - Identified FY21 and FY22 Annual Performance Plan Indicators and Milestones.
- Engaging with internal and external stakeholders/potential users of linked frames.
- Collaborating with, and participating on, various enterprise teams and efforts.
- Identified the organizational structure for the Frames Program as well as staffing plans for each team within the program.

Frames Program Roadmap

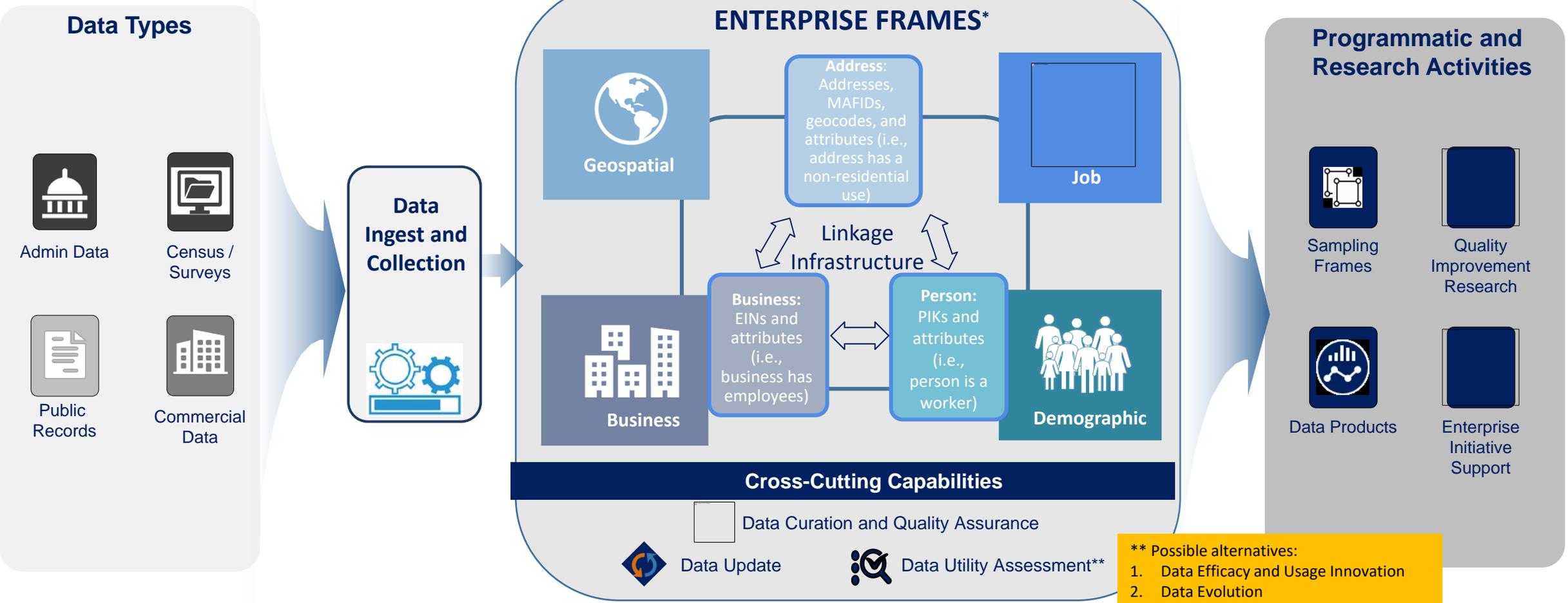


Program Goal: *The vision of the Frames Program is to create enterprise-wide frames linkable in nature, agile in structure, accessible for production or research on a need-to-know basis and that adhere to best practices in terms of technology usage, data management, and methodology.*

MAF Enhancement Project/Frames Program

MAF Address Matching Exercise Results

RECORD TYPES	Longitudinal Employer Household Dynamics		Business Register (T13 Subset)	
	COUNT	PERCENT	COUNT	PERCENT
Matched (to MAF) Records	22,890,316	84.81	3,866,198	90.26
Exact Matches	16,778,163	73.30	3,238,689	83.77
Probabilistic Matches	4,429,238	19.35	478,627	12.38
Basic Street Address-Only Matches	1,682,915	7.35	148,882	3.85
Unmatched Records (de-duplicated)	4,101,285	15.19	417,353	9.74
Total Unique Records Available for Matching	26,991,601	100.00	4,283,551	100.00
Duplicate Records	18,829,827		605,253	
Unavailable to Match	12,007,407		166,028	



- Assumptions**
- Data agreements are in place to support enterprise data sharing
 - Data management practices are well established and followed
 - Policy and access rules are enforced
 - Best practices/methods are well-documented and are available for review and re-use
 - Evaluation and improvement of data and methodologies is performed continuously
 - Dedicated research staff is available
 - Data is available upon ingestion
 - Ingest once, allow access across frames
 - Built in “real-time-updates” triggers across the frames
 - IT issues resolved for efficiency and security and usability

*This diagram provides a generalized view of the two-way flows of specified data elements (MAFIDs, PIKs, EINs, addresses, geocodes, etc.) between pairs of frames.

Bringing together data about the demographic, social, and economic characteristics of the nation’s people, households, and families

Input Sources

Census & Surveys

- Decennial Census
- American Community Survey
- Current Population Survey
- Survey of Income and Program Participation
- TBD

Administrative Data

- SSA Numident
- IRS (1040, 1099, 1099-R, W-2)
- TBD

Data Ingest

- Initial Harmonization
- PIK Assignment

Demographic Frame

Unique Identifier(s):
 Personal Identification Key (PIK)
 Master Address File Identification Number(s) (MAFID)
 Household Identification Number(s) (HHID)

Attributes:

Age	Marital Status
Data of Birth	Veterans Status
Sex	Educational Attainment
Race	Residential History (separate table?)
Hispanic origin	Etc.
Relationship	
Homeowner status	

Characteristics of workers (includes PIK and MAFID)

Geospatial Frame

Unique Identifier:
MAFID

Attributes:

Year Built	Tenure
Property Value	Property Tax
Internet Access	Mortgage (?)
Etc.	

Geospatial Frame sends MAFID associated with PIK (change in MAFID for PIK indicates migration/mobility)

Job Frame

Unique Identifier:
PIK

Attributes:

Employment Status	Occupation
Industry	Job Tenure
Wages	

Information about workers (including PIK) flows from the Job Frame as source of new records for Demographic Frame or as update to and check on existing records (e.g., is the person in the Demographic Frame old enough to be a worker?)

Programmatic and Research Activities

Sampling Frames
E.g., surveys of veterans or college graduates

Data Curation and Quality Assurance
Data validation, modeling, and other QC checks

Enterprise Initiative Support
*2030 Census
American Community Survey*

Quality Improvement Research
Data validation and other QC activities.

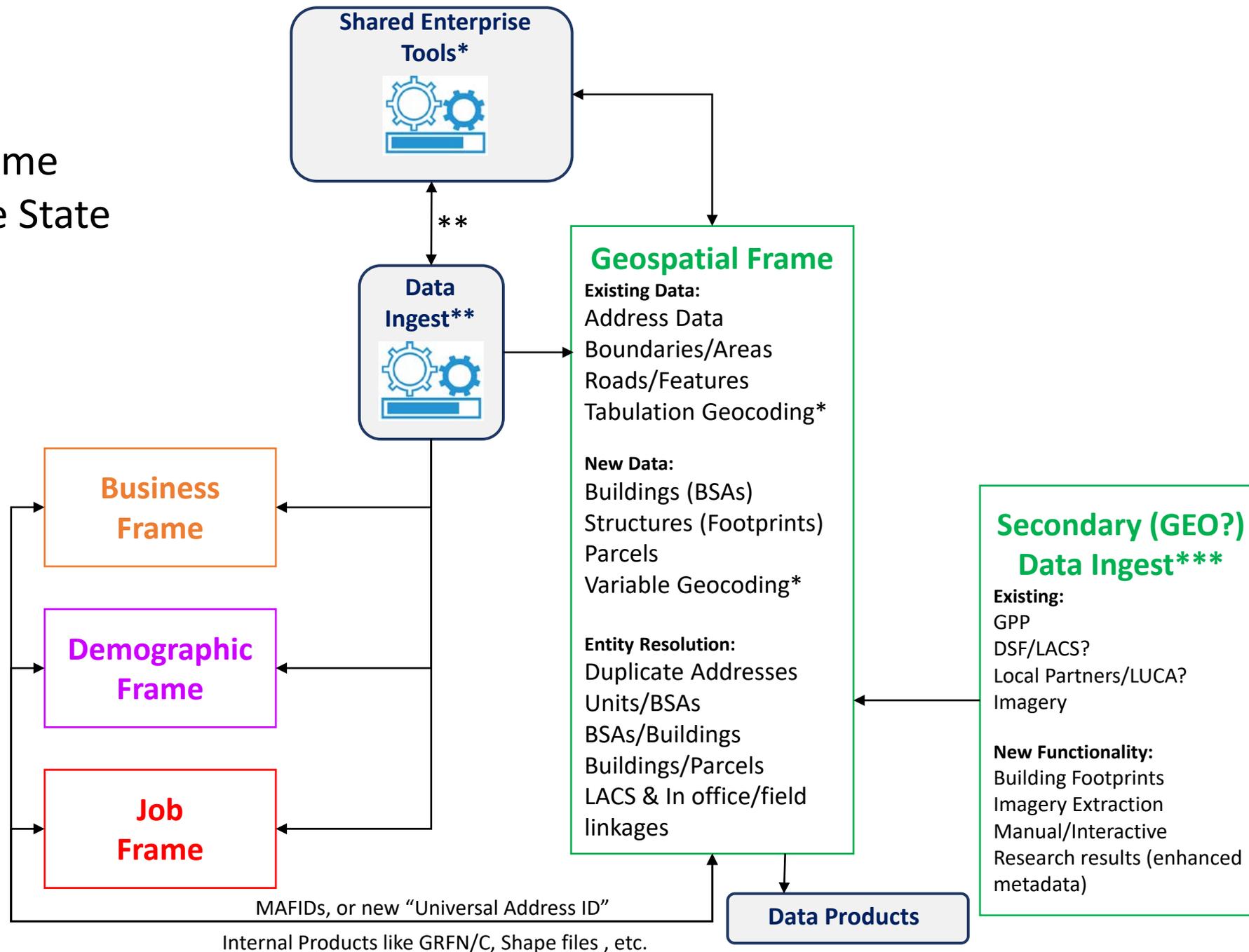
Data Products
TBD

Data Maintenance
TBD



Geospatial Frame High-Level Future State

Draft

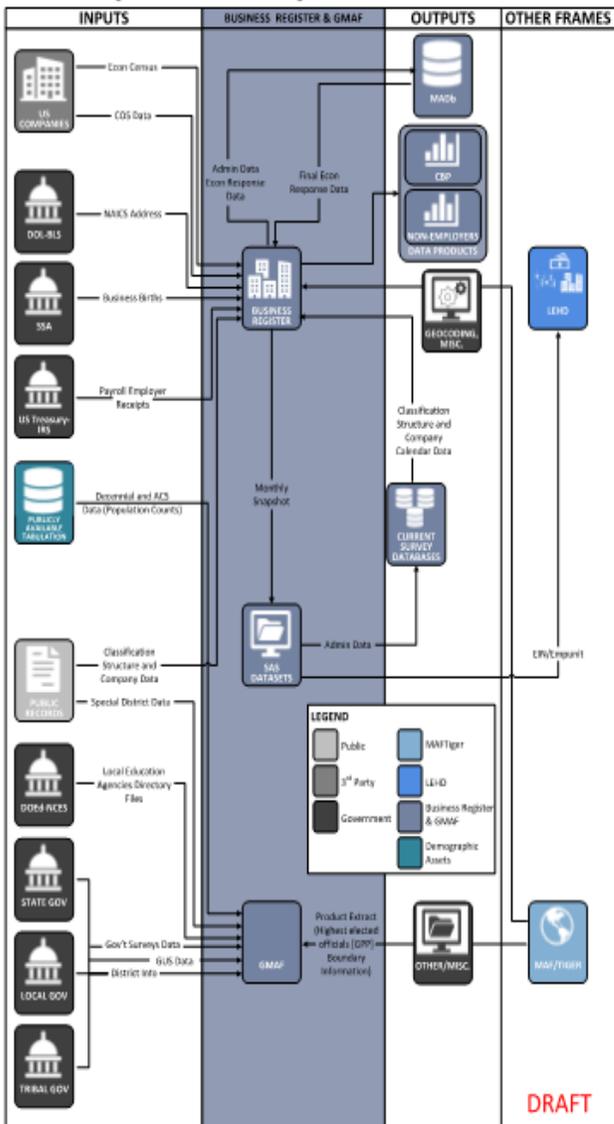


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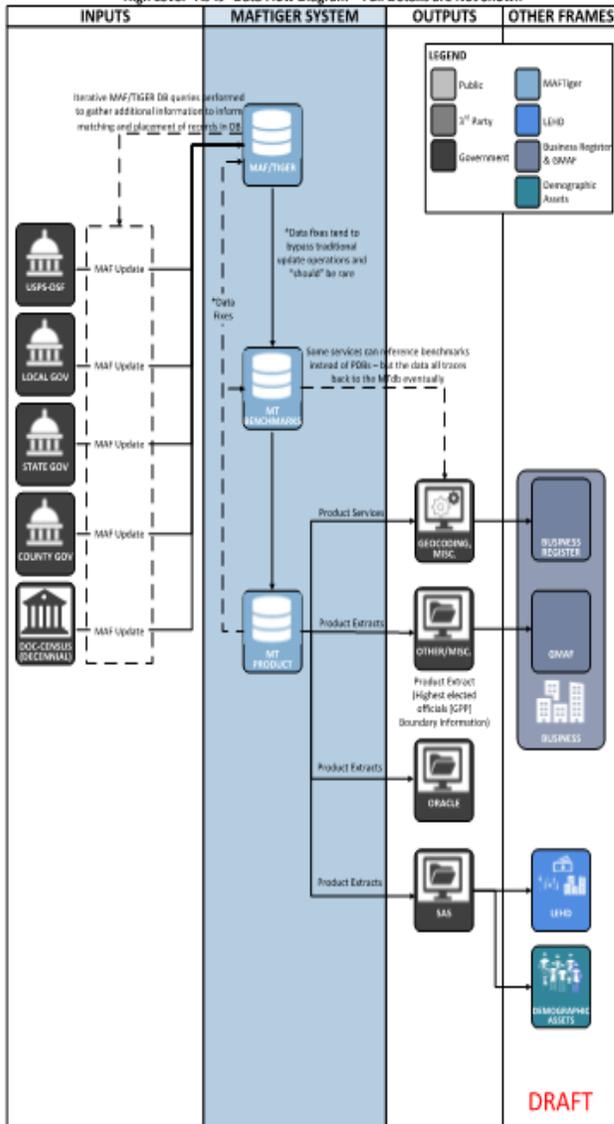
Next Steps

- Finalize ideal future state for each frame.
- Receive initiative approval and begin organizational restructuring in order to fully staff program teams.
- Draft Concept of Operations and required Program Management documentation.
- Develop features and begin requirements gathering.
- Continue weekly Program Management Office (PMO) meetings, weekly Team Lead-PMO meetings, bi-weekly briefings with Ron Jarmin, and monthly Frames Governance Group meetings.
- Monthly meetings with 2030 Planning focused primarily on development of the demographic frame and planning for use in tests.
- Continue participation on the Enterprise Data Lake Value Team and Enterprise Requirements Review Board.
- Continue participation on Census Bureau Maturity Model and Transformation activities.

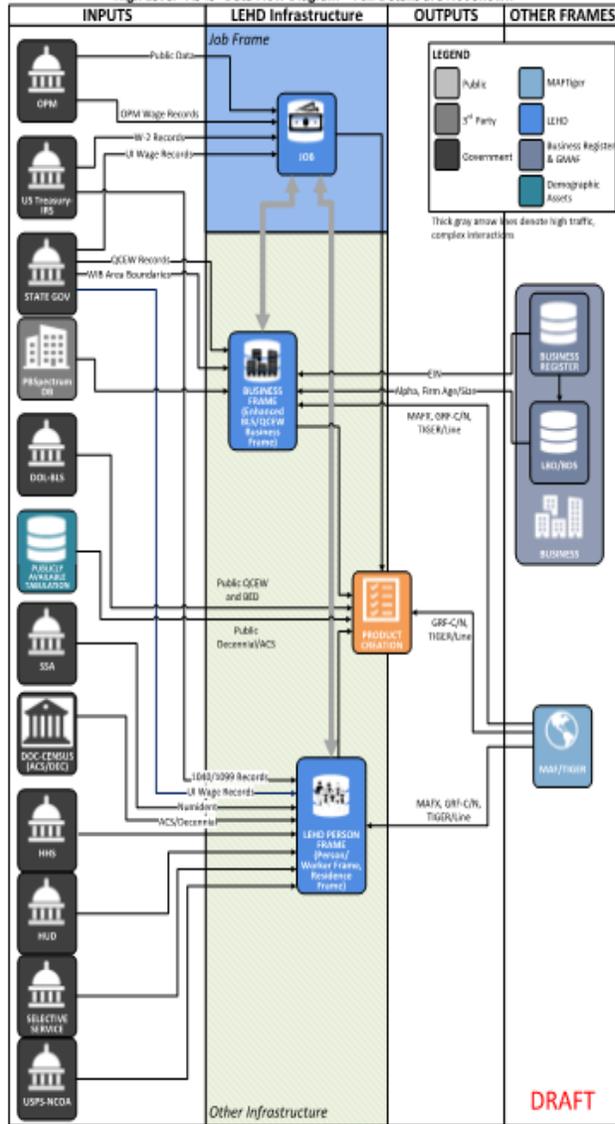
High Level "As-Is" Data Flow Diagram – Full Details are Not Shown



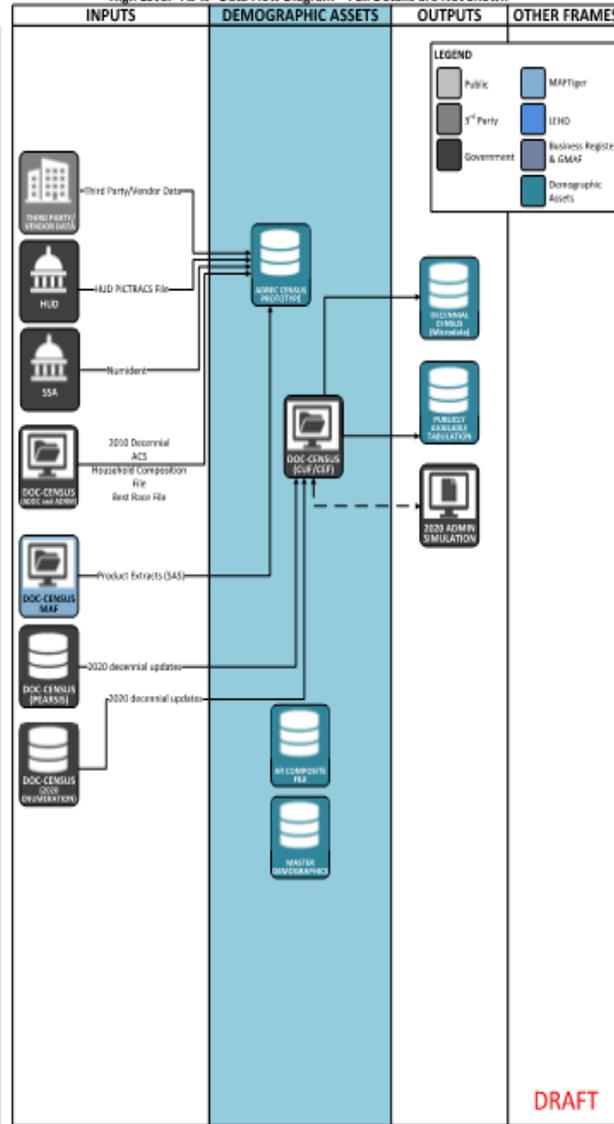
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High Level As-Is Internal Frame Interactions

B – BUSINESS REGISTER
 D – DEMOGRAPHIC ASSETS
 G – GMAF
 L – LEHD
 M – MAF/TIGER

