



**IDENTITY
& SECURITY**
CONFERENCE

December 1-2 Gaylord National Harbor

Enhancing Vital Records Data Security with Identity-Precise Tokenization and Privacy-Preserving Record Linkage (PPRL)

December 2, 2025



Today's Speakers



LexisNexis Government

Lynette Childs

Director of Strategy,
Vital Records Markets

Expertise in Vital Records and Vital Statistics operational management, public health information systems, vital records policy and standards, data sharing and interoperability.



LexisNexis Government

Richard K. Grape, Jr.

Sr. Director of Strategy,
Identity & Transformation

Expertise in digital identity, governance, and policy with a focus on public-private partnerships, interagency contributory data sharing, interoperability frameworks, and NIST identity assurance.



Current Landscape

The problems we face today...

Privacy
(PII and PHI)

Fraud
Protection

Minimum
Necessary

Data
Ownership



Researchers

Public Health
Programs

Programmatic
Resharing

Match
Specificity

Matching is challenging

Birth Certificate

State File Number Issue Date

Child:

- Javier Luis Prueba
- DOB: 01/01/2018
- Birthplace: Ann Arbor, MI
- 10:51 am
- Male

Mother / Parent:

- Mariana Elena Prueba
- DOB: 10/15/1990
- Birthplace: Kemp, TX

Father / Parent:

- John Luis Smith
- DOB: 06/10/1986
- Birthplace: Lansing, MI



Marriage Certificate

State File Number Issue Date

Party A/ Bride:

- Marianna E. Pueba
- Residence: Dowling, MI
- DOB: 10/15/1990
- Birthplace: Kemp, TX

Party B/ Groom:

- Jonathan L. Smith
- Residence: Kalamo, MI
- DOB: 06/10/1986
- Birthplace: Holt, MI

DOM: 07/04/2020
Place: Mackinaw City, MI
Emmet County



Divorce Certificate

State File Number File Date

Party A:

- Mariana Elena Smith
- ###-##-6###
- DOB: 10/15/1990
- Residence: Sturgis, MI

Party B:

- Jon Luis Smith
- ###-##-####
- DOB: 06/10/1986
- Residence: Sturgis, MI

DOM: 07/04/2020
Place: Mackinaw City, MI

Dissolution: 05/05/2027
Court Case Number
St. Joseph County



Death Certificate

State File Number File Date

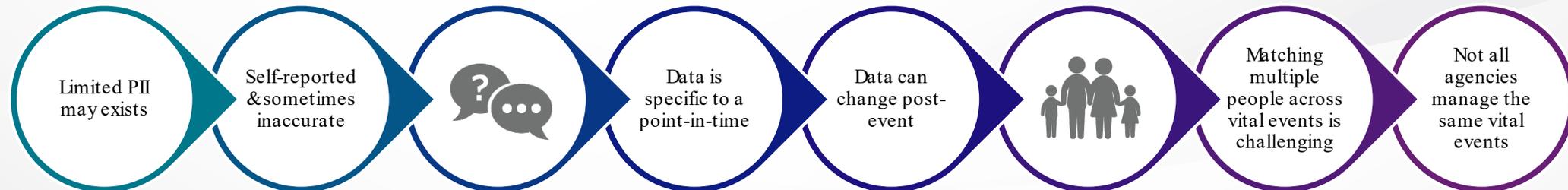
Decedent:

- Marianna Elena Prueba
- ###-##-5###
- DOB: 10/15/1990 - Age: 65
- Birthplace: Dallas, TX
- DOD: 05/21/2056
- Residence: 123 Main Street, Angola, IN 46703
- Hispanic
- Associates Degree
- Single

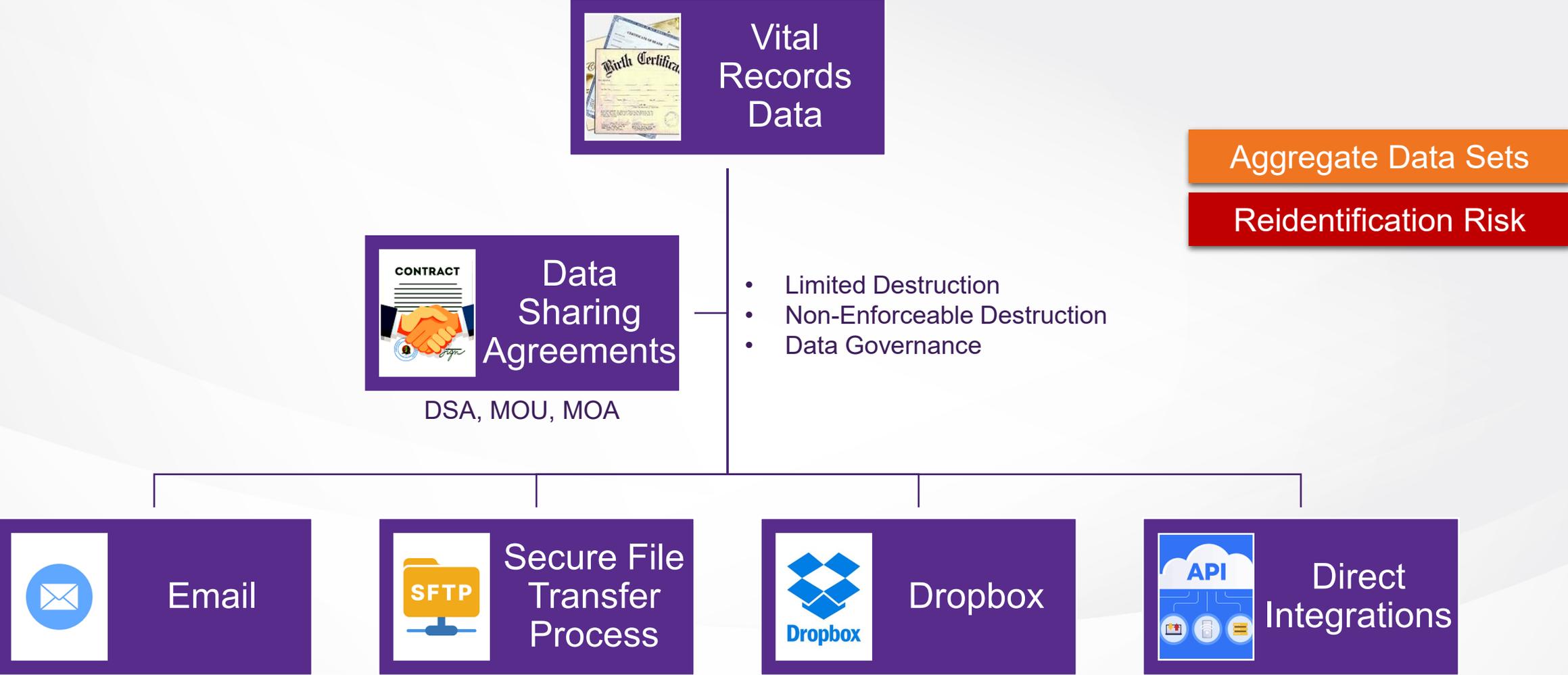
Other Information:

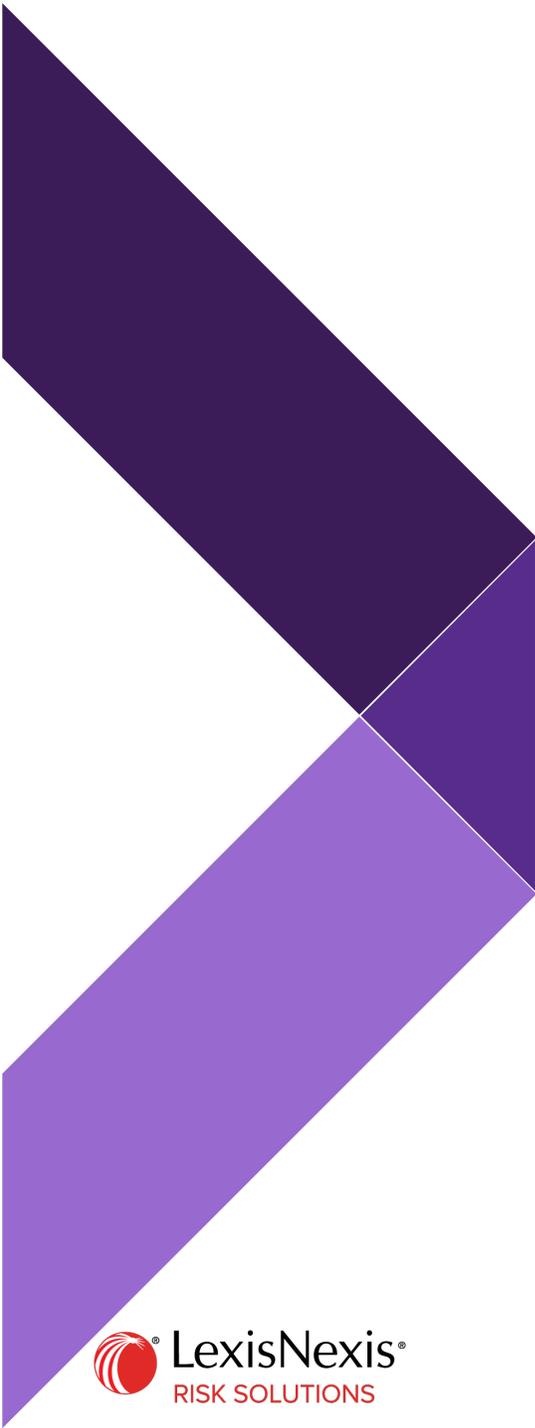
- Informant: Javier Prueba
- Mother: Maria Gonzalez
- Father: Javier Prueba





Current data sharing practices and risks



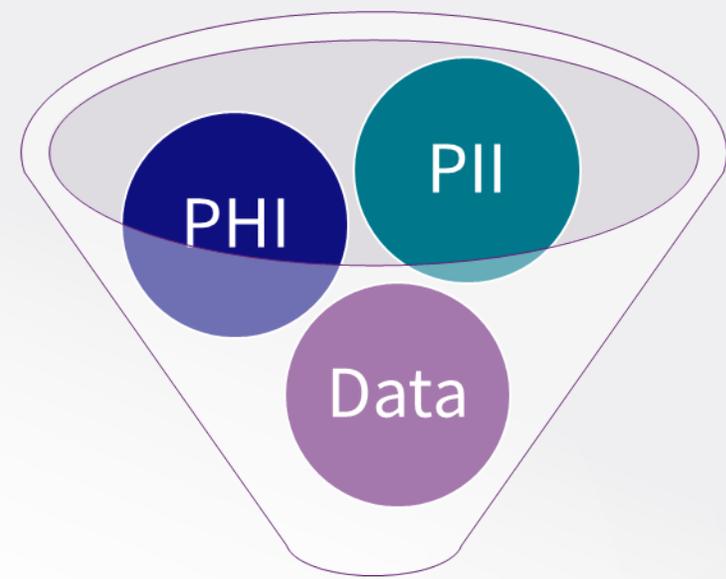


Tokenization to-date

What is Tokenization?

Tokenization is a method of replacing Personally Identifiable Information (PII) and Protected Health Information (PHI) with non-sensitive placeholder tokens for deidentification, matching, enrichment, and data sharing.

How is it used? Tokenization enables data exchange without the need for PII/ PHI inputs.

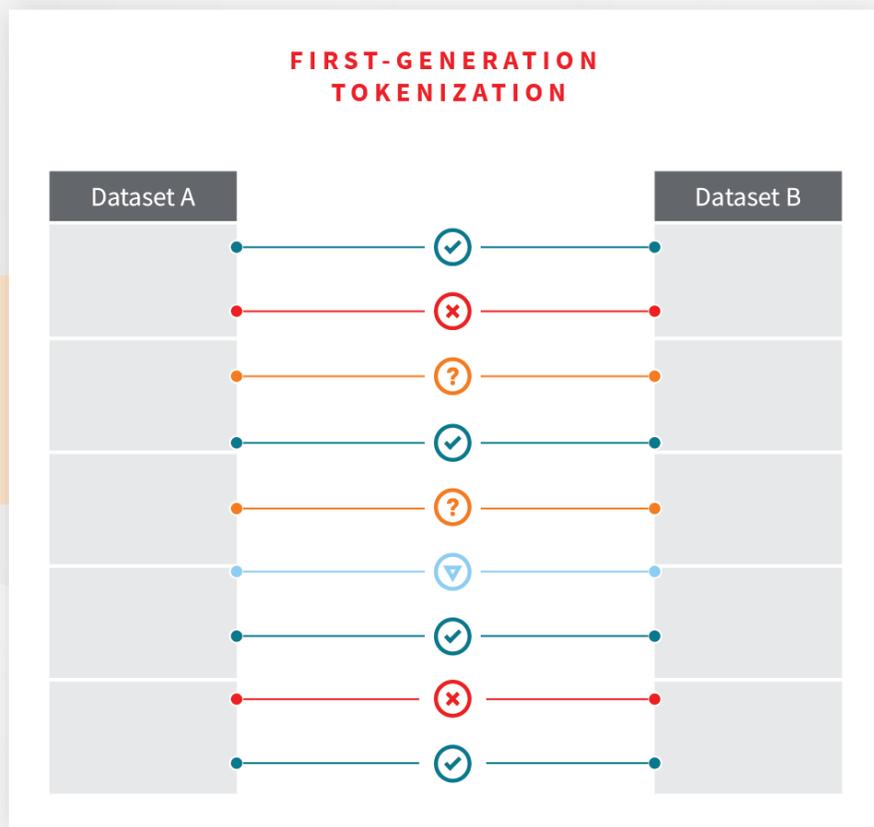


Token

At the core, tokenization is a process that de-identifies and transforms data into a unique string of letters, numbers, and symbols – i.e., a token.

Legacy Tokenization

Challenges with Data-Matching



True positive

Patient records at two different addresses get matched correctly.



True negative

Patient has a different birthdate and SSN than his father, so they do not get matched.



False positive

Patient and his father have the same name and share a previous address. They get incorrectly matched.



False negative

Patient moved, and then two records for Patient with different addresses do not get matched.

Legacy Tokenization

Challenges with Data-Matching

As more data, data types, and data sources exist, these methodologies become progressively less precise

Deterministic Matching

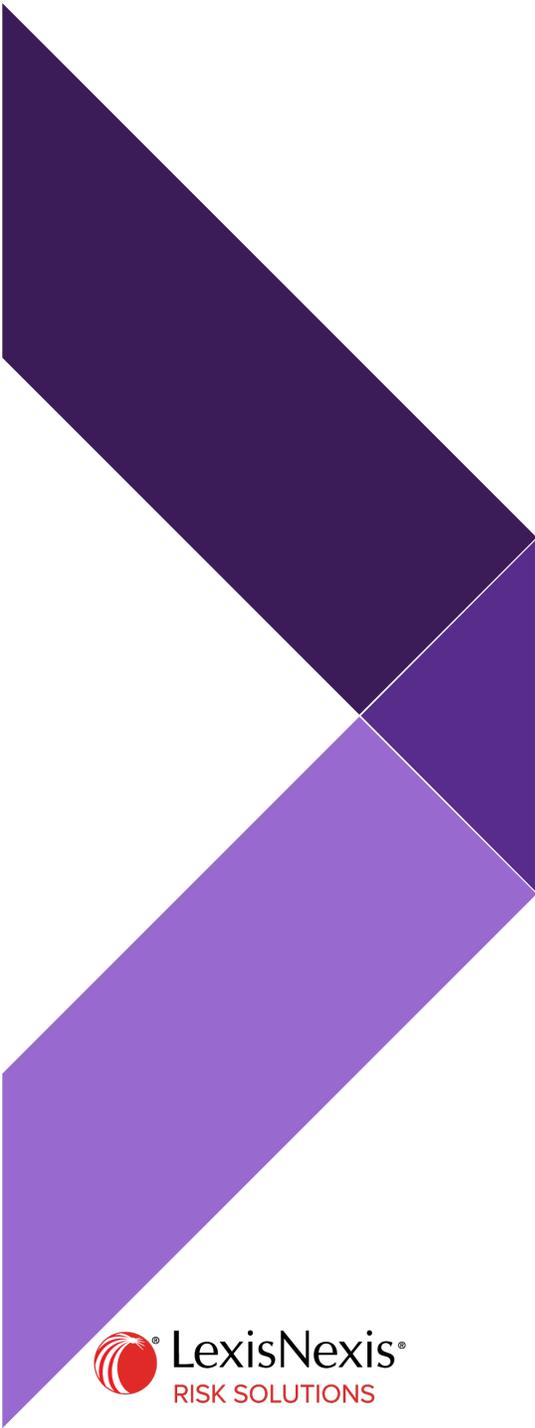
Links two datasets together based on shared attributes between them

- **Requires exact of rules-based conditions** to create a match (Ex. Full Name &SSN &DOB)
- **No tolerance** for typos, changes, or missing data
- **Fragile** with name/address changes, thin/unbanked/underbanked, and pediatric records
- Prone to **false negatives** and **duplicate records**

Probabilistic Matching

Links two datasets together based on the probability that they're both the same person

- **Fuzzy matching** that uses match scores to link based on similarity
- **More tolerant** of data quality issues
- **Input dependent** and only as good as the data each system supplies
- Prone to **false positives** and **false negatives**



The future of matching and data sharing

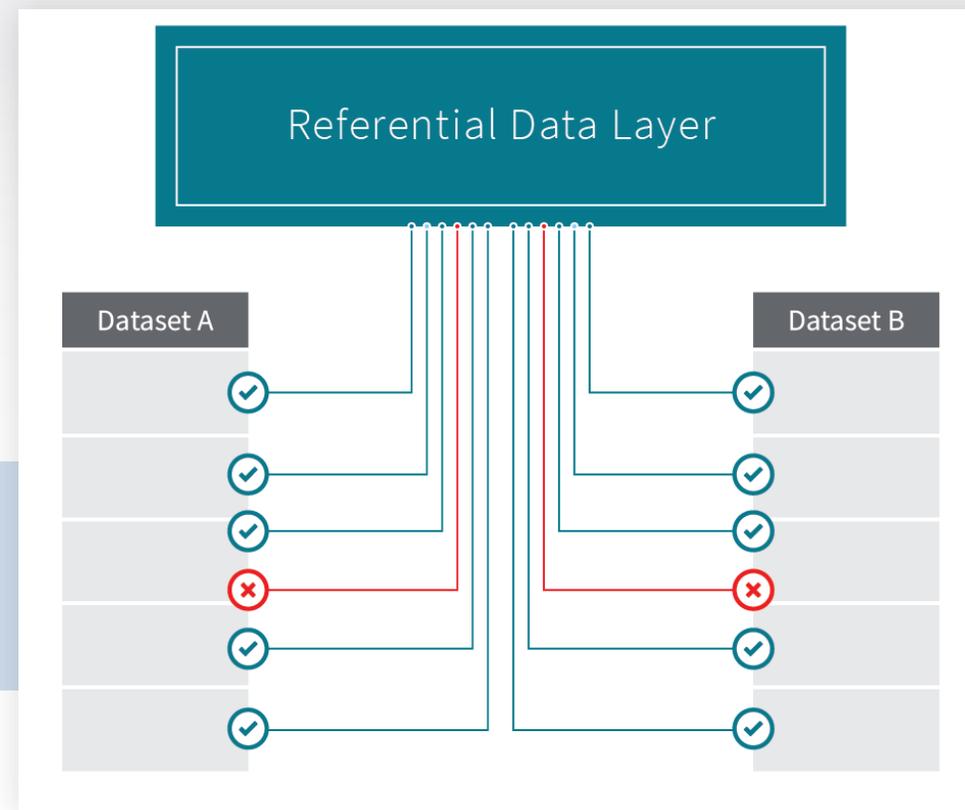
Next-Gen Tokenization

The Future of Data Matching

Referential Matching

Links two datasets together by referencing an aggregate data layer to combine all known insights about a person

- **Matches across all possible name / attribute combinations** using referential data for real-world context
- **High tolerance** for typos, changes, or missing data
- **Comprehensive coverage** for name/address changes, thin/unbanked/underbanked, and pediatric records
- Returns only **true positives** and **true negatives**



True positive

Patient records at two different addresses get matched correctly.



True negative

Patient has a different birthdate and SSN than his father, so they do not get matched.

Next-Gen Tokenization

Deidentified Referential Data Matching

50+ years of unparalleled identity and real-world data;
99.99% linking precision

LexisNexis
Example:



130+ billion public records,
14+ petabytes of data,
10K+ data sources,
99%+ of adults

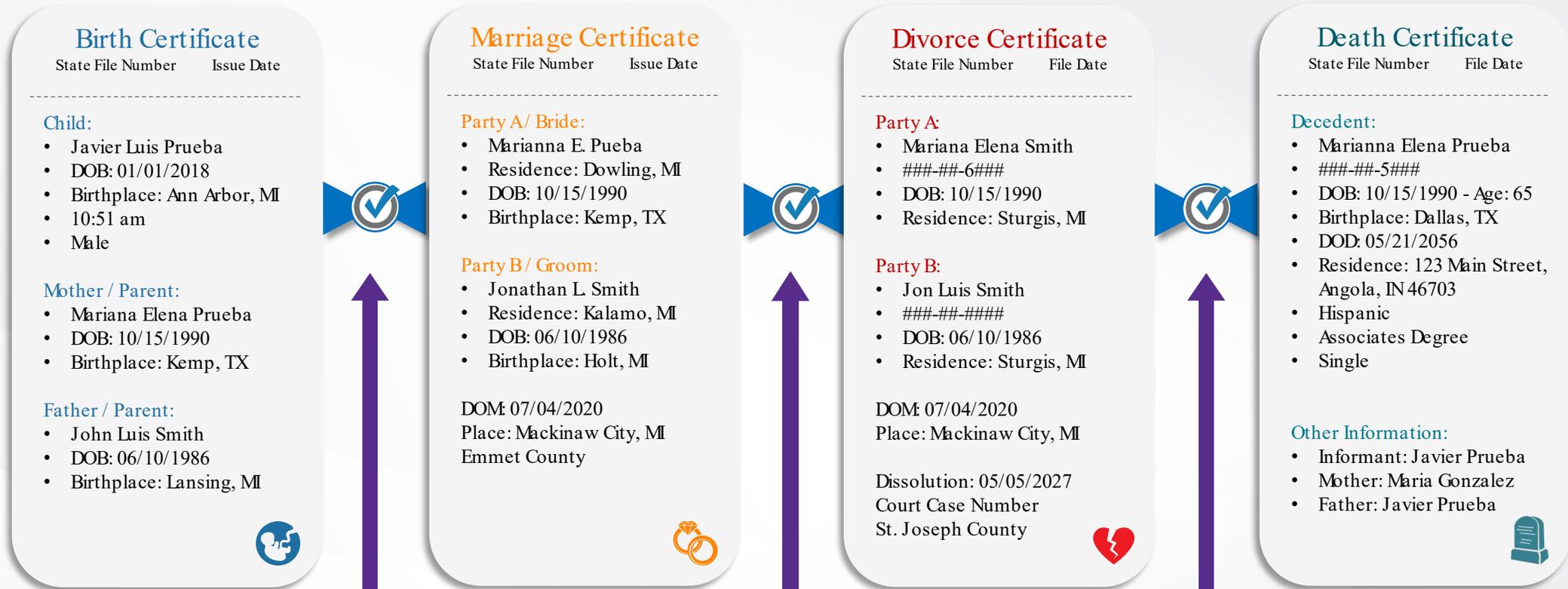


Referential Tokens: For each person in the LexisNexis®Risk Solutions universe, we replace PII / PHI identifiers with hashed and encrypted tokens that represent combinations of Name, SSN, DOB, Address, City, State, Zip, etc. in full, partial, and phonetic variations based on current and historical combinations as seen through real-world data

LexisNexis Risk Solutions sees ~24 Billion new tokens created on the US population per year representing net-new variations in PII utilized.



Precision matching



Precise linking across data sets regardless of identity variations or attribute discrepancies


Person-Centered Tokens
 Hashed and Encrypted

All identified data remains onsite at the agency and only tokens are shared

The future of data-sharing benefits all!

Privacy
Preserving

Mitigates
Fraud Risk

Precise and
Deidentified

Responsible
Data Stewards

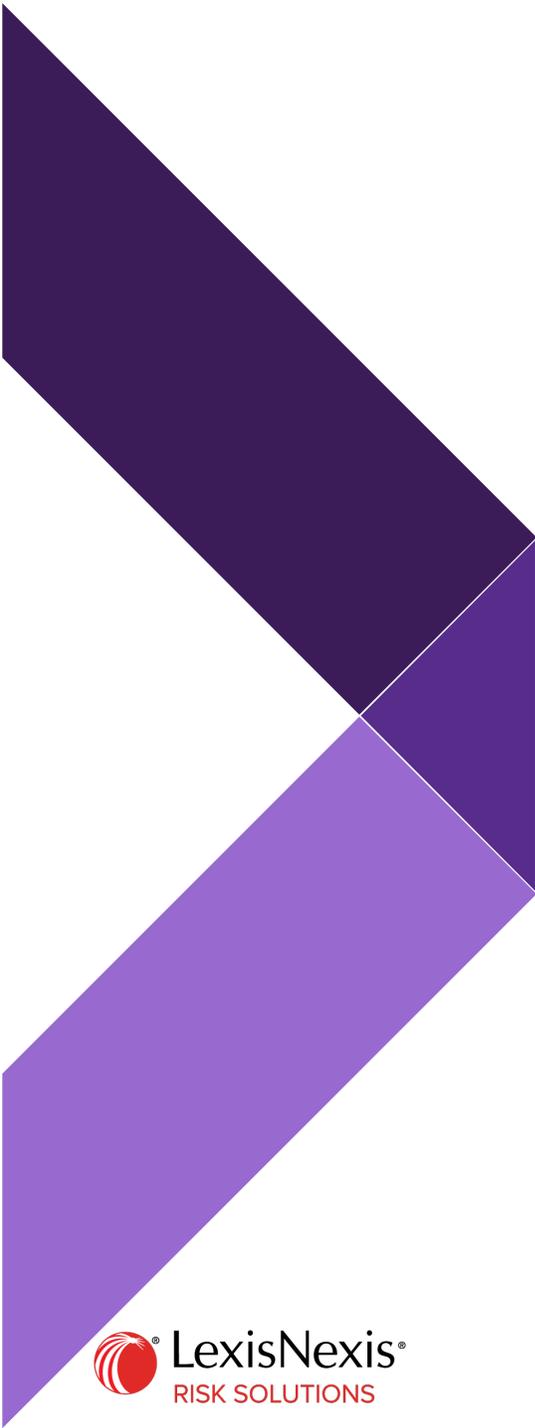


Accurate Data
for Research

Linked Across
Vital Events

Secure Data
Sharing

All Data Stays
with the Agency



Thank you for your time and open discussion!

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