

Is Your Data Ready For NG9-1-1?

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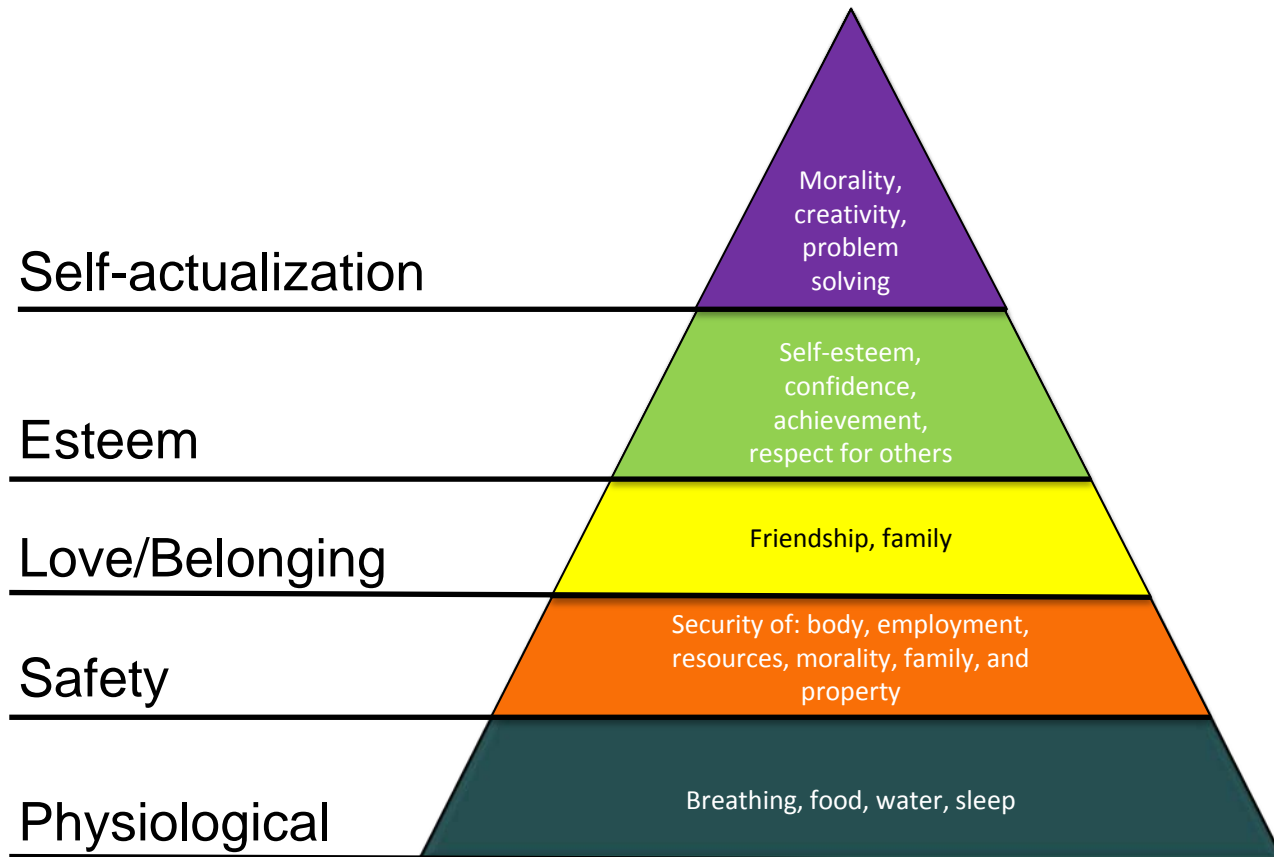
911 Datamaster

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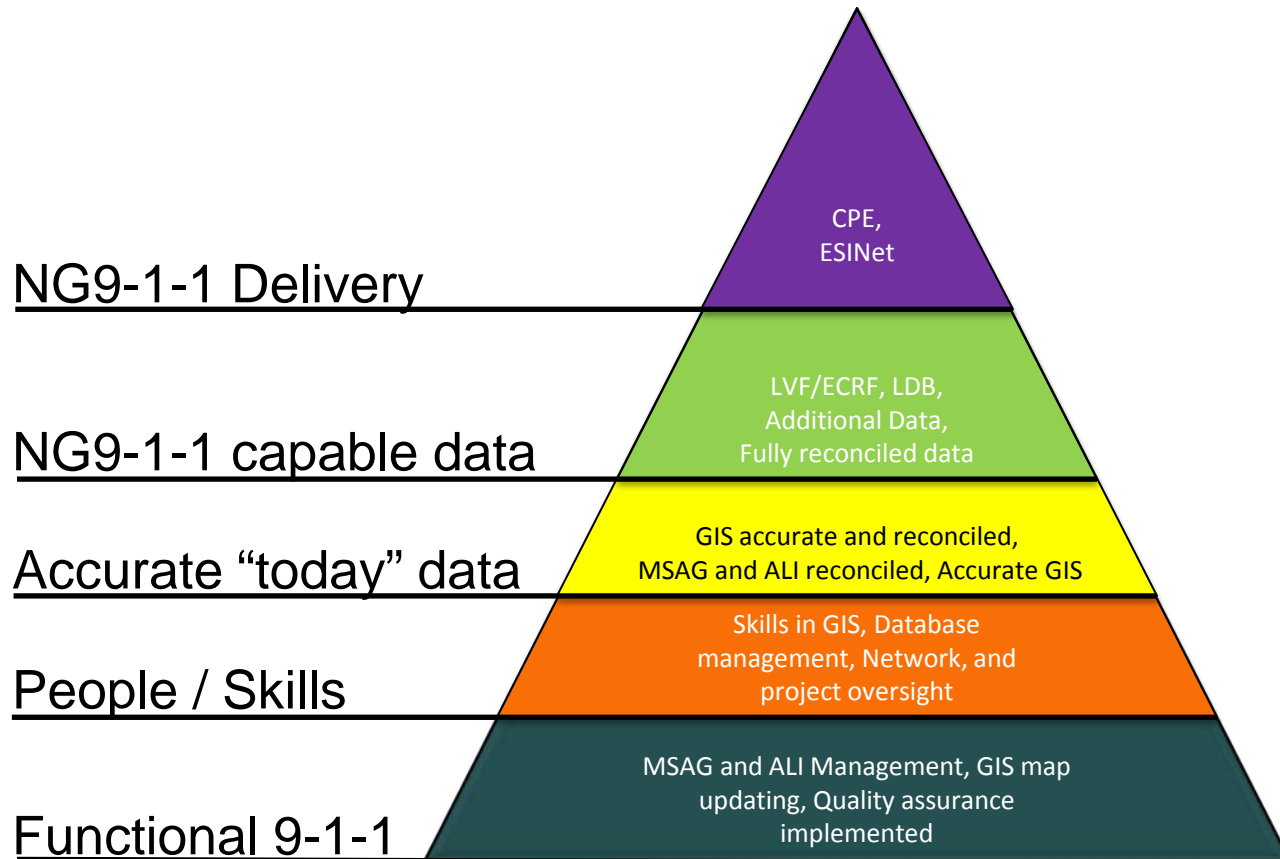
Needs Are Hierarchical

- "A Theory of Human Motivation", Abraham Maslow (1943)
- Can't move to "higher" needs until lower ones satisfied.
- Same pyramid effect exists for NG9-1-1

Maslow's Hierarchy



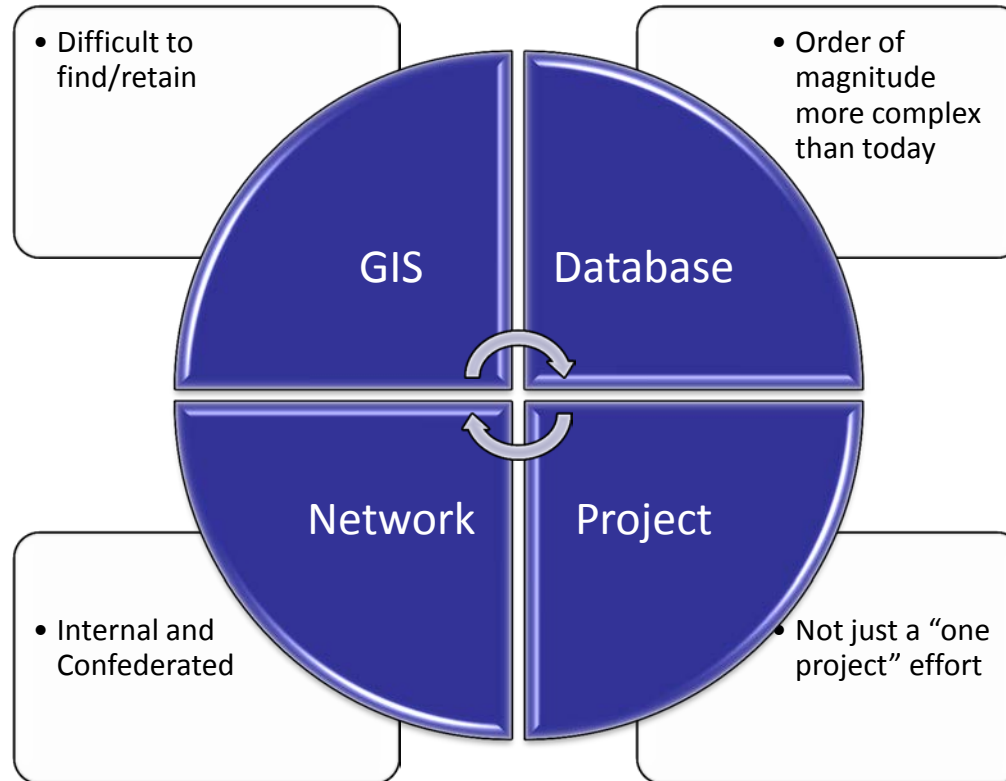
NG9-1-1 Hierarchy



Functional 9-1-1

- Characteristics:
 - Functional ALI and Database Management
 - Basic mapping capabilities (e.g., mapped ALI)
 - Minimal / no integration between traditional databases and GIS
- Measures:
 - ALI matches MSAG at a 99% level
 - VPC data matches MSAG at 95% (including NRFs)

People / Skills



Accurate “Today” Data: GIS

Address Points

Valid attribute values

Duplicate sites identification – sites with the same address

Parity address check

Road Center Lines

Valid attribute values

Duplicate line segment identification

Route connectivity errors

Overlapping ranges within same ESN

Duplicate road names in same town

Split on intersections, ESZ boundaries, and jurisdictional boundaries.

Line direction should reflect the increasing address range.

Invalid dangle nodes should be removed.

Polygons

Relation check of ESZ, ESN, Emergency Service Agency (ESA)

Remove empty (null/sliver) polygons

Eliminate gap and overlapping polygons

ESZ Boundaries should be joined to jurisdictional boundaries where appropriate (e.g. roads, rivers, municipality).

Accurate “Today” Data: ALI/MSAG

ALI

Valid attribute values

MSAG valid

Shell record clean up

MSAG

Proper attribution

Community names

Naming conventions

Buffered ranges

Other

VPC data MSAG valid

ENS data available for all civic locations

Accurate “Today” Data: GIS vs. Traditional

Address Points

AP matches to ALI Data Base

All ALI records have an AP

Road Center Lines

Communities match

Road names in the MSAG/ALI
should agree with the road
names in GIS

Polygons

ESZ, ESN info matches to
MSAG/ALI

PSAP boundaries match current
call routing

NG9-1-1 Capable Data

- LVF/ECRF
 - GIS/SIF: Provides an interface between an authoritative copy of GIS data and functional elements within an ESINet (ex. accessed by the ECRF for GIS data updating). Some design considerations:
 - The best location to perform ‘edge matching’.
 - Centralized data repository for multiple entities.
 - Will need to support multiple jurisdictions.
 - Various types of local government access will be required as well as data format support.

NG9-1-1 Capable Data

- ALI/LDB/LIS
 - *Jim's Postulate*: The concept of access provider LISs will not materialize in a timely enough fashion for most NG9-1-1 deployments.
 - The LDB is the NENA recognized transitional functional element.
- Additional Data
 - *Jim's Corollary*: Additional data sources (call, location, caller) will not materialize in a timely enough fashion for most NG9-1-1 deployments.
- Fully reconciled data
 - Internal: GIS vs. MSAG vs. other sources
 - External: Are all your service providers (i.e., VPCs) reconciling against your LVF?

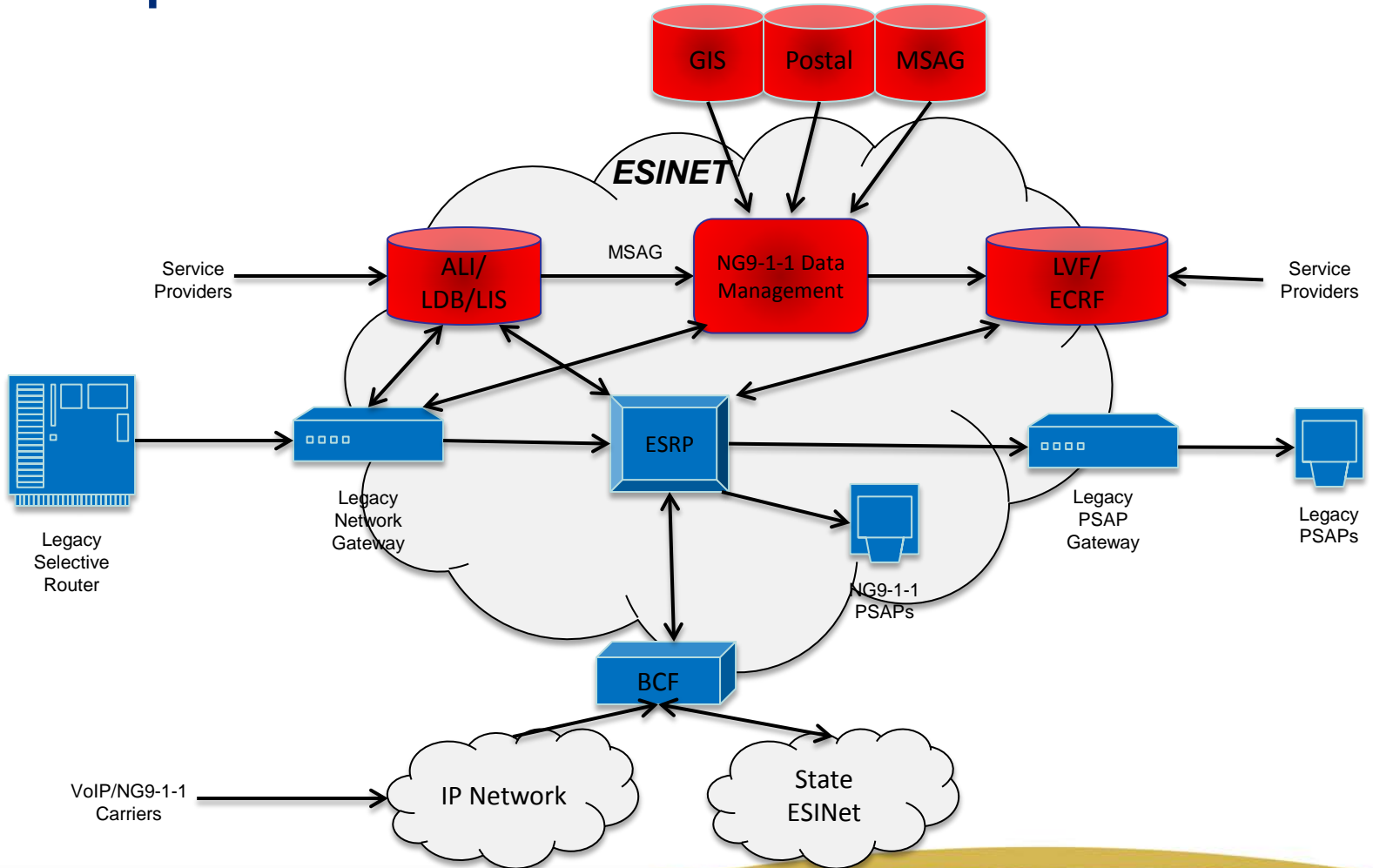
NG9-1-1 Delivery

Although the focus tends to be on the physical components of CPE and network, the real delivery is NG9-1-1 data.

- CPE
 - IP-enabled is not enough
 - Prioritize features (e.g., is video delivery more important than additional data, etc.)
- ESINet
 - It is not an ESINet without delivery; thus ECRF (thus LVF)
 - An “island” or an interconnected “quilt work”

Data Transition Check List

“Simplified” NG9-1-1 Model



The Key Issues / Opportunities Facing Us

- Making a “Field of Dreams” into Reality will Require:
 - Building Realistic LVF / ECRF Data
 - Evolving ALI and DBMS
 - Ensuring Performance Parity of Third Party Data Sources
 - Bringing Service Providers into the Fold

Reference Data

1. Perform QC checks within GIS data [Potentially reference GIS WG work on GIS reconciliation]
 - RCL vs. ESZ Polygons
 - Address Points vs. RCL and ESZ
 - Topology
2. Reconcile MSAG vs. Postal
 - Postal Communities vs. MSAG Communities
 - Postal Streets vs. MSAG Streets
 - Street range (including parity) issues.
3. Reconcile MSAG vs. GIS
 - GIS Communities vs. MSAG Communities
 - Address points
 - Road Center Lines
 - Service Polygons

Reference Data (continued)

4. Reconcile data across adjacent jurisdictions
5. Create LVF / ECRF database
6. Validate ALI / LDB against LVF data
 - Each ALI record against address points (if available), else;
 - Each ALI record against RCL
7. Develop mechanism to extract tabular MSAG from LVF data for use by third parties.
8. Modify the database management process / software to utilize LVF based validation rather than MSAG.

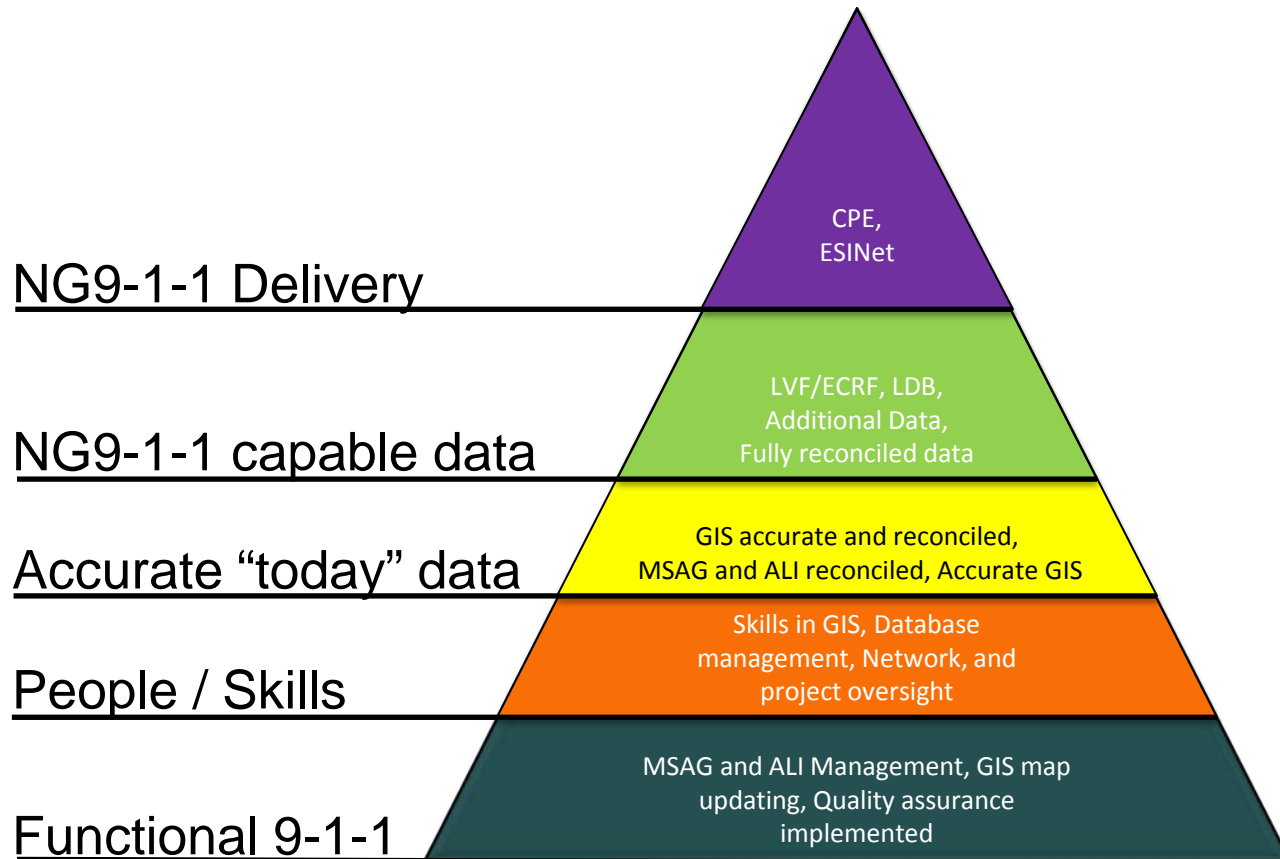
Source Data

1. Transform all ALI / LDB records to be PIDF-LO format capable.
 - Parse embedded pre-directionals, post-directionals, street suffixes, etc.
 - Change reference data (MSAG, GIS, and LVF) with every parsing correction.
 - Third party education
2. Re-validate all records against LVF data.
3. Decide whether to move forward with LDB model.
4. Create LDB
 - Migration Plan
 - Test Plan with MPCs, VPCs, and service providers

Third Party Interaction

1. Notify service providers of upcoming usage of LVF.
 - Enforcing validation and periodic re-validation
 - Trend analysis to correlate “no location” calls vs. whether it was ever validated (and who are the offending service providers)
2. Notify service providers of upcoming implementation of LNG/ESRP.
 - Migration Plan
 - Test Plan
3. Notify service providers of enhanced PSAP capabilities.
4. Develop data recovery mechanism for emergency notification systems if / when service providers move to LIS and VPC.
 - Create metrics to examine records extracted from LIS’s that are not LVF valid.
5. Establish uptime and quality regulations for LIS and Additional Data providers.

NG9-1-1 Hierarchy



Questions

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