

Kansas NG9-1-1 Toolbox –

Getting Started

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Prepared by DASC

Prepared for Ken Nelson, GIS Committee Chair

Document Change Log

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| --- | --- | --- | --- |
| Date | Author | Change | Reason |
| 09/29/15 | Kristen Jordan | None | Original release |
| 12/21/15 | Kristen Jordan | Added “Verify Road Alias” tool | We added a new tool |
| 06/30/16 | Kristen Jordan Koenig | Clarified ArcGIS release version | Tool works in 10.3 and higher |
| 08/07/20 | Kristen Jordan Koenig | Clarified ArcGIS release version | Tool works in 10.3 and higher and ArcGIS Pro |
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The Kansas NG911 Toolbox contains a series of data quality assurance checks that need to be run before each NG911 GIS data submission. The toolbox includes the following modules:

Adjustment Tools

Comparison Tools

Conversion Tools

Enhancement Tools

Metadata Tools (v1.0 ONLY)

Submission Tools

Validation Tools

The Kansas NG911 Toolbox is compatible with ArcGIS Desktop versions 10.3 and higher and ArcGIS Pro.

# Getting Started

Unzip the NG911 Toolbox and leave all files and folders in the native structure. Maintaining this file and folder structure will aid in future tool updates.

# Validation Tools

The tools in the Validation toolset were written to review the NG911 geodatabase data as a baseline for submission to the NG911 project.

The Local Data Steward or Data Maintainer is responsible for running Kansas NG911 GIS data submissions through the Kansas NG911 Toolbox validation module before data is submitted through the NG911 Portal. To run these tools, open the toolbox and toolset in ArcCatalog or ArcGIS Pro, and, at minimum, run the tools numbered 1 through 5. To run all checks included in tools 1-5, run “9 Optional Check All Required.”

* 1 Check Template
* 2 Check Address Points
* 3 Check Roads
* 4 Check Emergency Services Boundaries
* 5 Check Administrative Boundaries
* 6 Optional Clear Results Table
* 7 Optional Update Domains
* 8 Optional Verify Topology Exceptions
* 9 Optional Check All Required

The validation tools confirm that the data complies with the NG911 Kansas GIS NG911 Data Standard and the NG911 GIS Data Model Templates (Esri compatible). Each tool has a list of data checks to run, as well as some optional checks. All checks should be run on data at least once before submission. Some checks are optional to allow the user to run an entire or partial check on a second pass.

## Interpreting the Results

The interactive window gives a few details about data feedback. All results will be displayed in one of two tables added to the NG911 geodatabase: *TemplateCheckResults* & *FieldValuesCheckResults*. Several other tables and feature classes may get added to the geodatabase as well including *GeocodeTable* (addresses to be geocoded) and *gc\_test* (results of the geocoding test). All these additional tables are not required for submission and can be deleted.

All data in *FieldValuesCheckResults* table will have a FeatureID recorded. This ID number corresponds to the unique ID field (like SegID for roads) of a particular layer. Users can look up errors in multiple ways. One way is to bring the feature class and the *FieldValuesCheckResults* table into ArcMap or ArcGIS Pro and to do a join between the feature class unique ID field and the FeatureID field in *FieldValuesCheckResults*.

## Checking Data After Edits

After editing any data, users can run whichever checks are needed to validate the data again. To clear out any extra/old data in the Results table, use tool “6 Optional Clear Results Table”. The validation tools skip data marked as exceptions or that shouldn’t be submitted, so please be sure to keep the EXCEPTION and SUBMIT attributes up to date.

# Adjustment Tools

The adjustment tools are designed to quickly edit various data issues to prepare data for submission.

# Comparison Tools

The comparison tools generate a report detailed the differences between either two similar NG911 feature classes (address points and address points) or two NG911 geodatabases. The comparison tools are intended for PSAPs to see data differences between their own data from different time snapshots.

# Submission Tools

The submission tools are designed to run through all of the data checks, generate a submission report, and zip up your data for submission. This should be the final step performed before data is submitted.

# Conversion and Enhancement Tools

Some tools are for making life easier and automating certain data creation tasks.

* Conversion Tools:
  + GDB to Shapefiles: Exports your entire NG911 data into shapefiles & DBFs
  + Upgrade to GDB 1.1 Template: Upgrades your entire NG911 1.0 geodatabase into a 1.1 geodatabase
  + Zip NG911 Geodatabase: Creates a zip file of your NG911 geodatabase to prepare it for submission to DASC
* Enhancement Tools:
  + Add KSPID: If your PSAP/county has GIS parcels, this tool will automatically determine, calculate and import the KSPID into the address points. The tool can use 16 or 19 digit PIDs, and the 19 digit version will be added to the address points.
  + Assign Unique Identifier: Auto-generates a unique ID for your data
  + Calculate Label: Calculates the “label” field in your address point file or road centerline file. It can either recalculate the whole layer or just update records you’ve recently added that are blank.
  + US National Grid Calculator: Adds national grid coordinates to data as well as Lat/Long coordinates if those are blank

For users wanting to perform some additional data validation checks, we’ve got plenty of tools to assist any Type A personalities in their journey for spotless data. Results will be added to the *FieldValuesCheckResults* table unless otherwise noted in the interactive window. Here are the tools designed to highlight some elusive data issues:

* Enhancement Tools:
  + Check Road Elevation Direction: Makes sure the ELEV\_F and ELEV\_T attributes correctly depict the elevation rise and fall of road segments.
  + Check TN List: Geocodes a list of telephone number addresses against the MSAG information in the NG911 Address Points and Road Centerlines. This tool requires a TN (telephone number) list.
  + Create Road Alias Records: Creates road alias records for all roads of a certain name.
  + Find Address Range Overlaps: Finds areas where address ranges overlaps. Overlapping address ranges can negatively affect geocoding accuracy.
  + Geocode Address Points: This tool will geocode the address points against a locator created with the road centerline. The locator will sit outside the NG911 geodatabase.
  + Verify Road Alias: Verifies road alias names against the approved highway name list.
* Validation Tools:
  + 8 Optional Verify Topology Exceptions: Double check that all road centerline topology errors are noted as exceptions. Note: this tool will not work on NG911 1.0 template geodatabases.

Additional documentation for each toolset can be found in the “Docs” folder.

Questions? Please email Kristen Jordan Koenig at kristen@kgs.ku.edu