Addresses and Geographic Names as Spatial Reference Systems
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ABSTRACT TEXT: There are four types of spatial reference systems: coordinate reference systems, linear reference systems, address reference systems, and geographic names (gazetteers). This presentation will look at the two most commonly-used and least documented of the four: address reference systems and geographic names. There are three types of address reference systems. The presentation will review the rules and elements needed to define them (from FGDC address data standard section 2.4.1):

1. Identification: ID, name, authority, extent, type, reference documents
2. Designation of house numbers, street names, and place names
3. Spatial definition the address numbering grid: origin point, axes, breakpoints, breaklines, and polygons.

Geographic names include place names, landmark names, and subaddress names/identifiers. Alone, a geographic name identifies a location but conveys no idea of where the location is. In combination, geographic names form a hierarchy that allows one to zero in on a location with increasing precision, from large (country, state) to small (subaddress). Each name must be unique within the area covered by the next larger name. This presentation will set out the rules and elements by which we construct and use the three categories of geographic names: their internal structures, attributes, spatial rules, data rules, and relation to addresses.

How the State of Hawai‘i Reached Over 99% Synchronization between MSAG and GIS
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ABSTRACT TEXT: In preparation for migration to Next Generation 9-1-1, National Emergency Number Association (NENA) recommends at least a 98% match between the Master Service Address Guide (MSAG) and GIS datasets. During a 9-1-1 call, several pieces of location information are provided to the public safety answering point (PSAP). Whether the 9-1-1 call originated from a VoIP, wireline, or wireless network, the Automatic Location Identification (ALI) is transmitted by the Communication Service Provider’s network, and provides the street address (or in wireless 9-1-1 calls, the pseudo tower/sector address from the tower handling the call). If available, the X/Y location of the caller’s device (along with confidence) is also transmitted to the PSAP. Because Computer-Aided Dispatch (CAD) systems rely on GIS databases to display locations of calls, it is paramount that addresses and/or location data in those databases matches the data transmitted to the PSAP during the 9-1-1 call.

In the state of Hawai‘i, the PSAPs, telephone and VoIP companies and wireless providers collaborate to ensure over 99.8% match between the two databases. This presentation outlines the workflows used to achieve and maintain this level of accuracy, and the efficiencies in dispatching emergency services that result from high level of database synchronization.