August 2, 2007
Final session of Generalization Commission Workshop

1* linkages between multiple representations

- update ; regeneralize but if linked in multi DB then harder to know how related features are affected ; many to one collapse is challenge
- phenom-to-phenom or process-to-process (eg stream permanence)
- mixing up-to-date inaccurate with accurate base eg driving data collection
- linkage on feature vs schema is distinction ; link image challenge eg road linked to feature identified in image ; helps validate missing in DB vs new feature
- attribution of linkage ; life track of object vs geometry change from eg typification
- when is data model excessively complex, redundant
- temp linkages while making decisions on gen
- do NMAs have MRDP ; does it solve update problem
- linkages not efficient data storage but spatial aware DB can accomplish
- start with one or multiple data sets (matching, conflation)
- how to make links and maintain them in matching task
- parentage detail; but few start with one DB
- contextual generalization
- toponomy – not placement but e.g. differences in decisions for isolated

2* formalization / harmonization of data models and everything else (tools)

- is formalization of constraints by scale excessive ?
- what range of scales is practical ; what is too wide range; what range is too narrow such that no variation in constraint eg bldg not overlap road (not challenging)
- what decisions cannot be captured by constraint, eg cart style, map or use goal, desired state
- gen show different patterns in data—is that a goal vs preserving eg forests vs trees ; are we trapped in preserving legibility vs seeing different view with different sources or overlays
- is our future in collection of constraint or bigger vision that prompts consideration of other mechanisms (give up on capturing the knowledge of cartographer)
- broad map requirements vs specific constraints for legibility ; constraint bound to scale is limiting
- user choose parameter by choosing a graphic eg vs entering number

- ontology linked to gen operators, level of task ; sharing common language ; computer understands instructions and geog meaning ; eg defn of an urban area or topo map ; others get benefit from our work when we have common language ; will we mire in describing all geog features or use existing data ontologies and feature association /topology ontologies
- deciding transformations between ontologies may be more productive ; between internal schema ; term ontology applied to software vs map object vs mental map vs map use is problematic ; knowledge management morass ; useful to agree on formalisms for schema based transormation, eg forest described by lower level primitives

3* expand scope beyond NMA to other data types (expand market)

- expand to viz and computer graphics contexts ; joint meetings with related groups
- 2D to 3D to 4D temporal data ; image incorp vs white space ; LIDAR data volumes, eg abstracting from point clouds of millions ; generalize sensor network data
- pattern matching from vision science
- computation geometry ; abstraction ; graph drawing ; multi-agent systems ; eg robot generalizes visual scene to make decision or generate knowledge
- do we restrain scope or extend to spatio-temporal, eg GPS tracks at multi times (co-data) ; evolution of objects on maps over time ; when bdry or flooded stream changes over time is it error or change
- or extend commission only to visual communication variety
- generalizaton from textual descriptions of space
- knowledge representation was umbrella term ; how applied in cartography and then out to other domains, eg action space or organizational matrix of power relations

Other topics from initial ideas offered

- link research to practical (increasing opportunities for funding)
- functional arch across scales
- optimization based on constraint-based modeling
- tools for on-demand mapping
  user requirements
- « challenges » to do hard task
- effect of symbol change on generalization workload