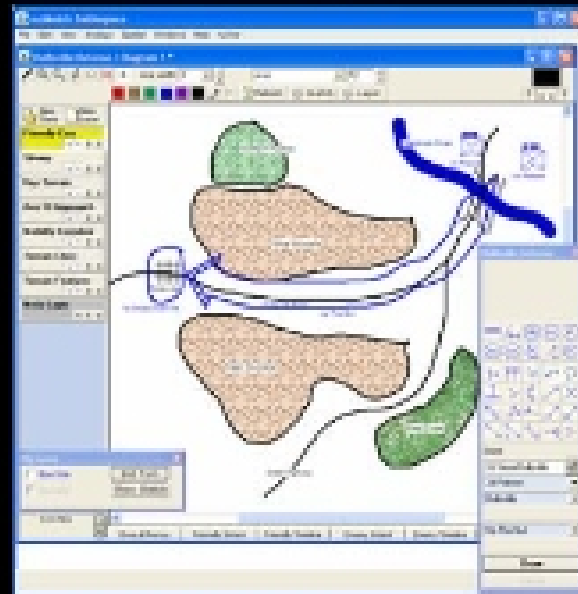


Qualitative Spatial Reasoning about Sketch Maps

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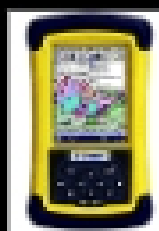


Presentation by Michael Hoffman

Qualitative Spatial Reasoning about Sketch Maps

- Introduction

- spatial representation used in many geospatial reasoning tasks



- Used to reason through a problem, not for conceptual design process

- Typically drawn by hand on paper

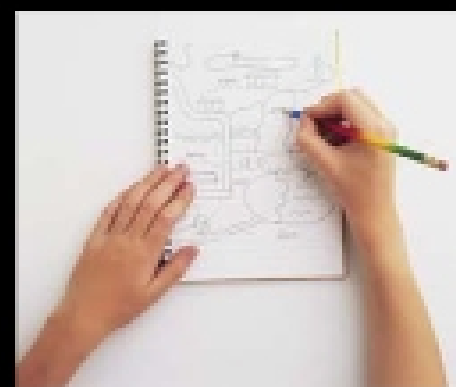
Qualitative Spatial Reasoning about Sketch Maps

- Introduction
 - specific geospatial domain,
battlespace reasoning
 - *Warfare*
 - Complex and important task
 - Requires coordinating an array of various units, equipment
 - Achieve goals in situations with great uncertainty and danger
 - Terrain effects movement, provides cover and concealment, and effects the operation of sensors
- Thus, geospatial reasoning must provide a role in generating and reasoning about battle plans



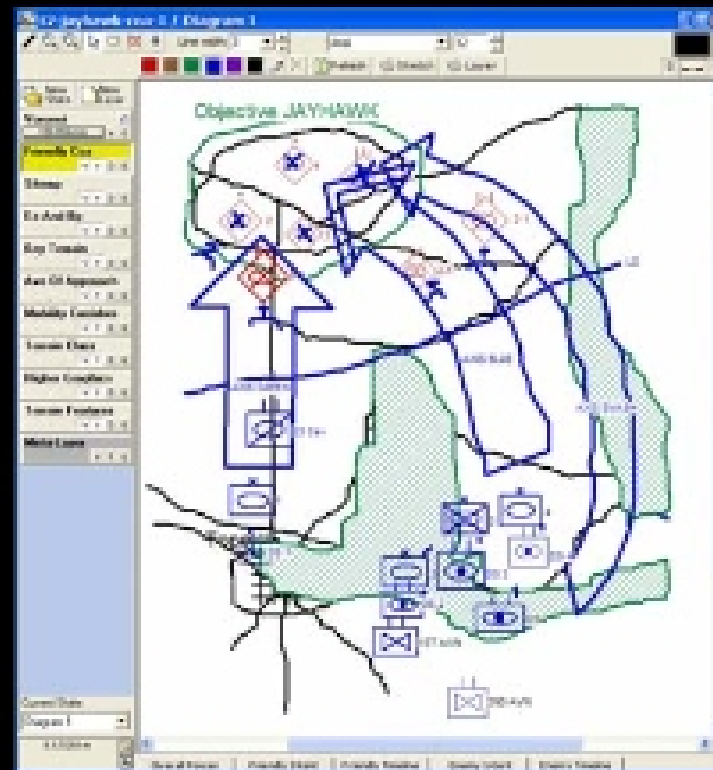
Qualitative Spatial Reasoning about Sketch Maps

- Introduction
 - Problem with current systems
 - Commanders don't want to use mouse and menus
 - Want to use sketch and interact with their people
 - Solution...
nuSketch Battlespace (nSB)



Qualitative Spatial Reasoning about Sketch Maps

- Overview of nSB
 - Avoid recognition issues by using clever interface design
 - Focus on richer visual and conceptual understanding of what is sketched
 - Two Systems have been developed:
 - nuSketch Battlespace (nSB): for battlespace reasoning
 - Sketch Knowledge Entry Associate (sKEA): general-purpose knowledge capture



Qualitative Spatial Reasoning about Sketch Maps

- large knowledge base concerning specialized military concepts
- Allows user to specify conceptual information
 - Types of entities
 - Timing information
 - Intent of actions
- Also
 - Sketch terrain
 - Specialized areas
 - Paths (engagement areas, axes of advance)
 - Position units
 - Assign tasks and reasons for doing them