Mapping Technology in WiSAR
an interview study

cmrRose.github.io/thesis
<table>
<thead>
<tr>
<th>Technology</th>
<th>Statement type</th>
<th>Use context</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper maps</td>
<td>Current use</td>
<td>Reference use</td>
<td>Geographic information</td>
</tr>
<tr>
<td>GPS devices</td>
<td>Limitation</td>
<td>Gathering situation inputs</td>
<td>Visual representation</td>
</tr>
<tr>
<td>GIS software</td>
<td>Advantage</td>
<td>Data analytics</td>
<td>Cartographic interaction</td>
</tr>
<tr>
<td>Desktop programs</td>
<td>Suggestion</td>
<td>Producing map products</td>
<td>GIS functions</td>
</tr>
<tr>
<td>Web maps</td>
<td></td>
<td>Map product use</td>
<td></td>
</tr>
<tr>
<td>Mobile applications</td>
<td></td>
<td>Collaboration</td>
<td>Human resources</td>
</tr>
<tr>
<td>General</td>
<td></td>
<td>Other specific use</td>
<td>Cost</td>
</tr>
<tr>
<td>Other (specific) map-related technology</td>
<td></td>
<td></td>
<td>Institutional</td>
</tr>
</tbody>
</table>

36 codes in 4 categories
Nearly all discussion regarding the limitations of GIS software corresponded to ‘non-functional’ considerations.
EFFICIENCY
need for quick access to data
data deluge
need for easily accessible information

COST
cost of data
cost of software
cost of hardware
cost of training

HARDWARE
power source
display size

HUMAN RESOURCES
training
availability of personnel
data custodianship
human error
awareness of GIS capabilities
preference for a certain technology
willingness to adopt new technology

CONNECTIVITY
connection to communications networks
(internet, cell service, radio coverage)

INTEROPERABILITY
data from disparate sources
sharing data among multiple users
integrating data types

USABILITY
difficulty/ease of use
output easy to understand
complexity of software

INSTITUTIONAL
culture of the response community
interagency cooperation
sharing data between agencies
certain forms of mapping technology serve specific tasks best
Collaboration & Common Operating Picture
“The relatively new technologies such as tablets or online mapping capabilities all have possible uses in SAR and can in fact coexist and complement one another.”

Pfau 2013, 14
“Interoperability… defined here as pertaining to the ability of different technologies to exchange information”
technology is only as functional as your knowledge of it.
“I’ve seen somebody put a **post-it note on a computer screen** because they didn’t know how to make the dot on the computer screen.”

--Participant

“Anytime you get overloaded with technology, it’s as much of a barrier as not having enough technology.”

--Participant
Improve **usability, interoperability, and training**
to meet in the middle
Tomaszewski 2015: *GIS for Disaster Management*

Pfau 2013: “Wilderness Search and Rescue: Sources and Uses of Geospatial Information”

Ferguson 2008: “GIS for Wilderness Search and Rescue”

Zerger and Smith 2003: “Impediments to using GIS for real-time disaster decision support”
