

# Mapping Technology in WiSAR

an interview study



[cmrRose.github.io/thesis](https://cmrRose.github.io/thesis)

## Technology

## Statement type

## Use context

## Requirement

Paper maps

GPS devices

GIS software

Desktop programs

Web maps

Mobile applications

General

Other (specific)

map-related

technology

Current use

Limitation

Advantage

Suggestion

Reference use

Gathering situation inputs

Data analytics

Producing map products

Map product use

Collaboration

Other specific use

Geographic information

Visual representation

Cartographic interaction

GIS functions

Human resources

Cost

Institutional

Interoperability

Connectivity

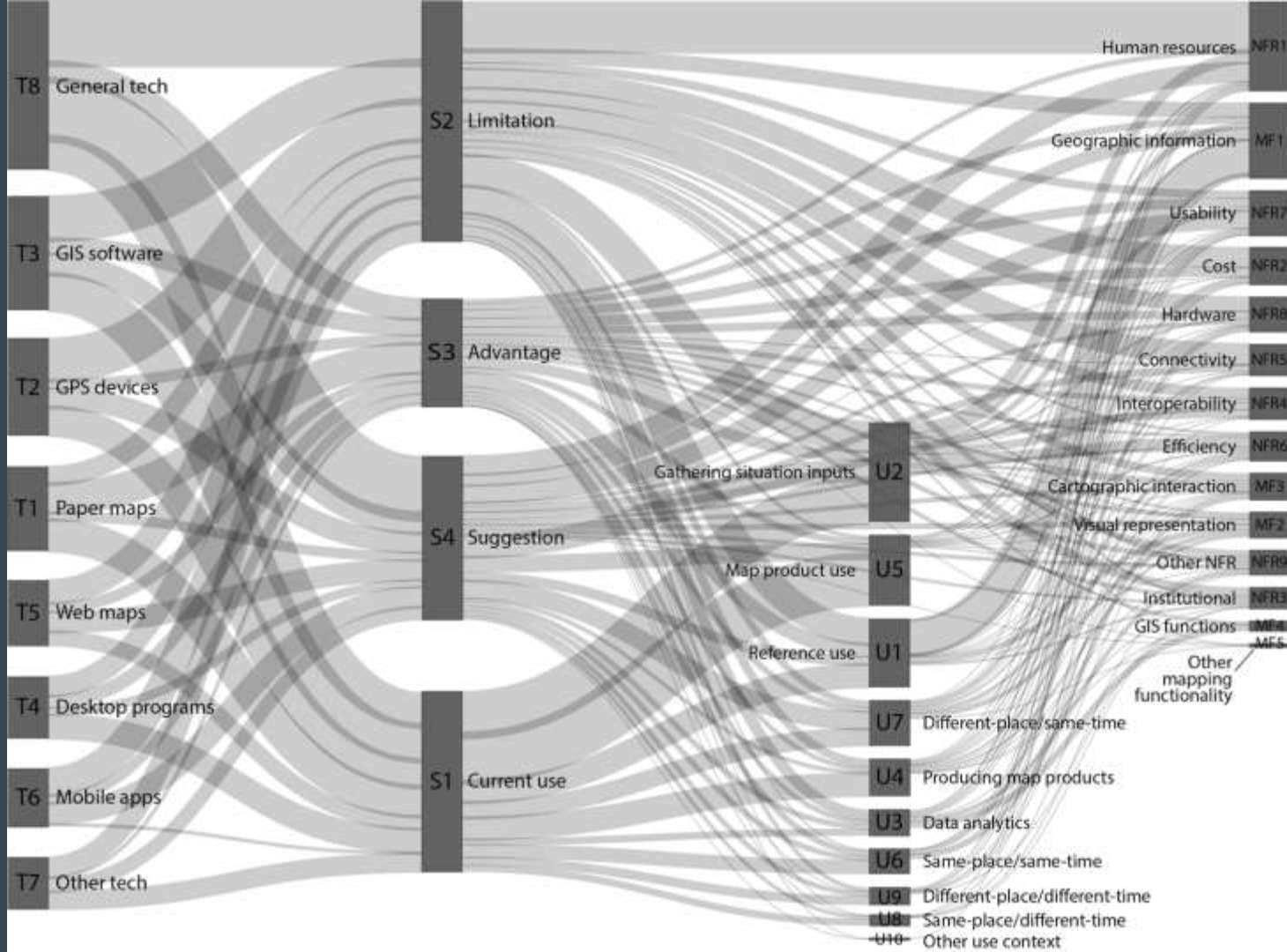
Efficiency

Usability

Hardware

Other NFR

**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

## **USABILITY**

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

## **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**

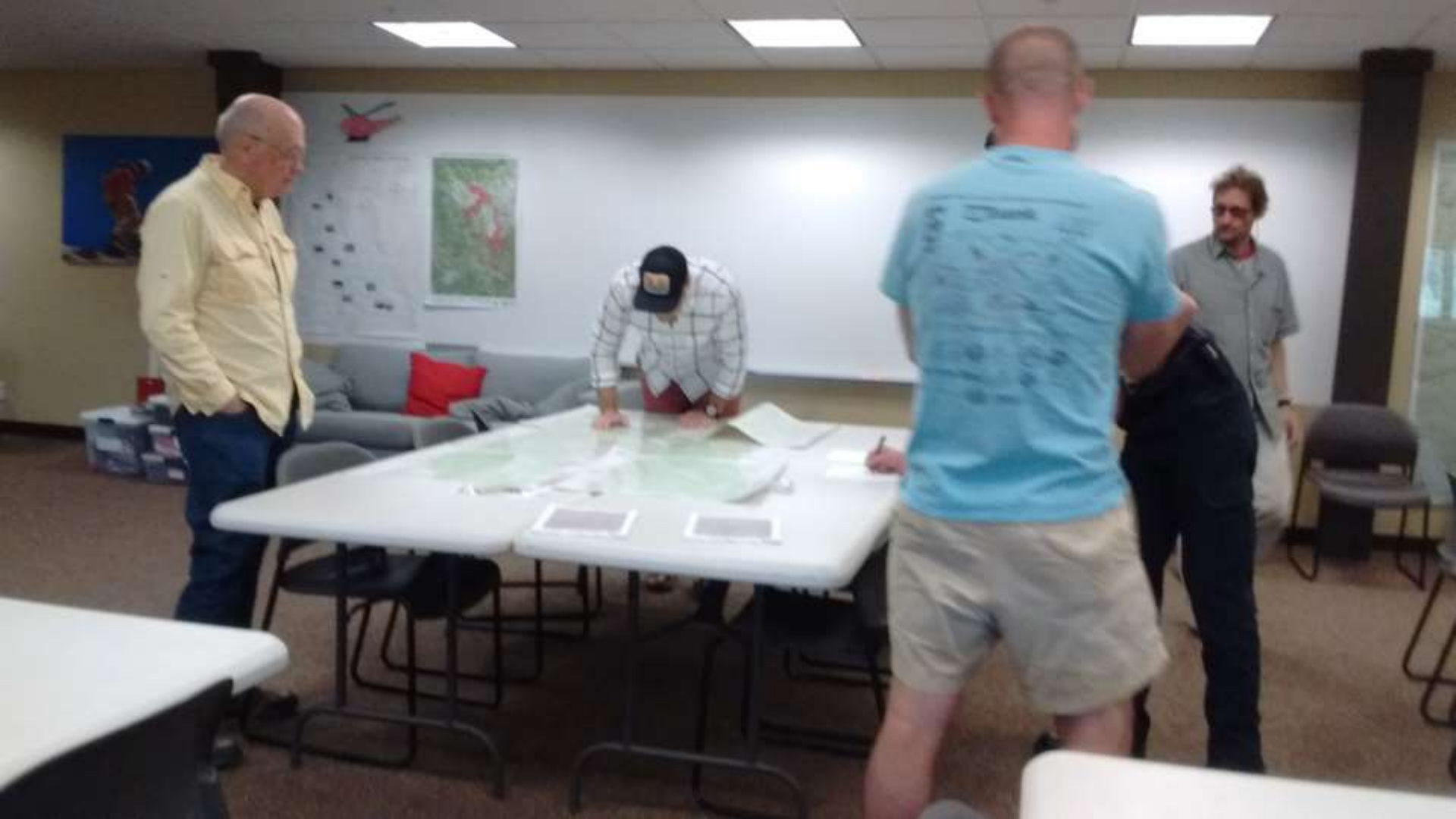
connection to communications networks  
(internet, cell service, radio coverage)

## **INSTITUTIONAL**

culture of the response community  
interagency cooperation  
sharing data between agencies

## **INTEROPERABILITY**

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



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

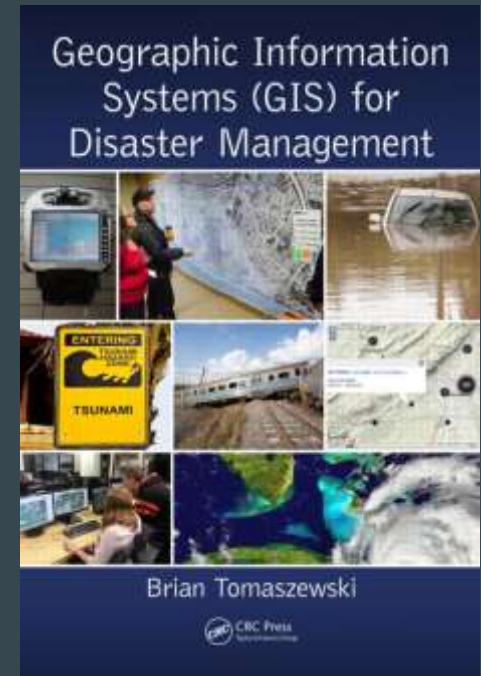
Tomaszewski 2015: *GIS for Disaster Management*

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”

Cutter 2003: “GIScience, Disasters, and Emergency Management”



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