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Lighthouse: A handheld intelligence support platform

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<http://hdl.handle.net/10945/41806>



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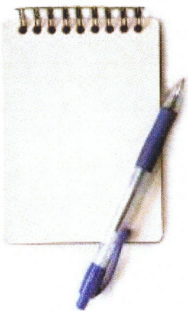
A small, stylized lighthouse icon with a red and white striped tower and a black lantern room, positioned to the left of the word "LIGHTHOUSE".

LIGHTHOUSE

Illuminating social networks to help navigate the human terrain

PROBLEM

Detailed information regarding a population's composition, *social structure*, and physical terrain are required to develop effective operations and shape policy, **yet we have no effective structure** for collecting, processing, analyzing and sharing this kind of information.



SOLUTION

Lighthouse is the application of commercial-off-the-shelf and open-source technology and analytic methodologies developed in the Common Operational Research Environment to help solve complex problems.

Designed by operators for operators.

From data collection to analysis

- Enable data collected on the ground to be relevant, useful, and *structured*
- Provide a framework for collecting *relationships*
- Harness automated information systems to provide the data transformation

Reduce the amount of time and work from the point of capture to the analyst

System Overview



Internet

AT&T 9:00 AM
 ODK Collect > Start New Form

- Railway Form**
Added on Mon, Jun 06, 2011 at 22:30
- Bridge Form**
Added on Mon, Jun 06, 2011 at 22:30
- Ports and Harbors Form**
Added on Mon, Jun 06, 2011 at 22:30
- Civilian Engagement Form**
Added on Mon, Jun 06, 2011 at 22:30
- School Form**
Added on Mon, Jun 06, 2011 at 22:30
- Dislocated Civilian Form**
Added on Mon, Jun 06, 2011 at 22:30
- DSF Form**
Added on Mon, Jun 06, 2011 at 22:30

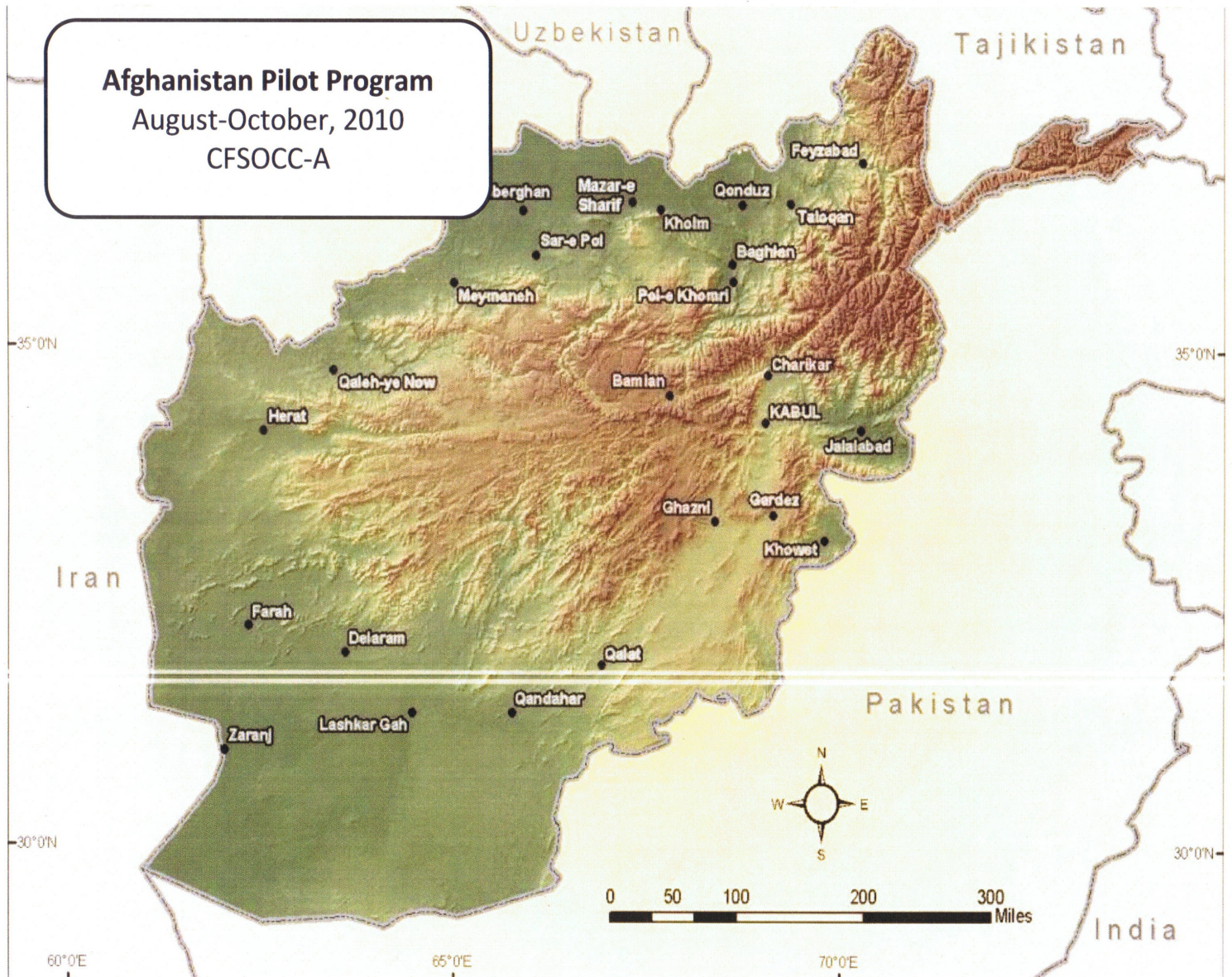
The top part of the image shows a screenshot of a web application titled "Civilian Engagement". It features a table with columns for "FormID", "FormName", "FormType", "FormStatus", "FormVersion", "FormDate", "FormLocation", "FormState", "FormCounty", "FormCity", and "FormChoice". The table contains several rows of data.

The bottom part of the image is a diagram titled "Analytical Tools Supporting CORE Lab Methodology". It shows a central vertical line with arrows pointing to various software tools:

- Arc GIS
- Microsoft Virtual Earth
- Quantum GIS
- Google earth
- UCI
- Peak
- *ORA
- Palantir

Analytical Tools Supporting CORE Lab Methodology

Afghanistan Pilot Program
August-October, 2010
CFSOCC-A



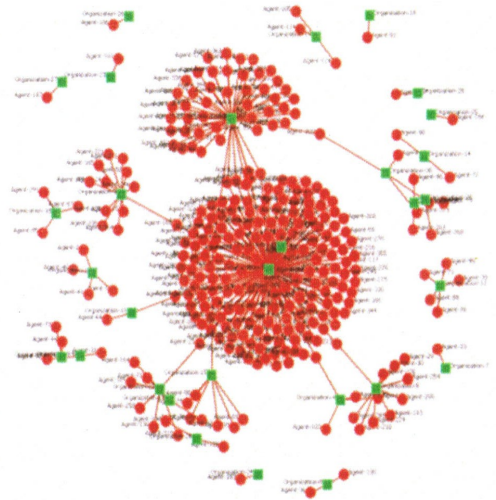
Afghanistan pilot implementation

- ~ 90 day collection effort
- 3 villages
- 8 phones
- Support to village stability operations (VSO)

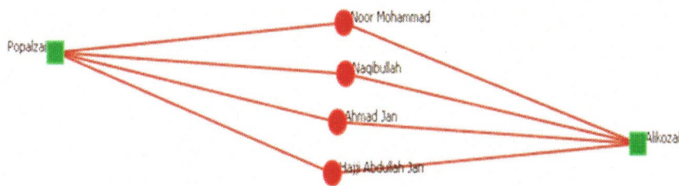
Determine applicability and utility of the CORE lab methodology



Understanding Tribal Networks



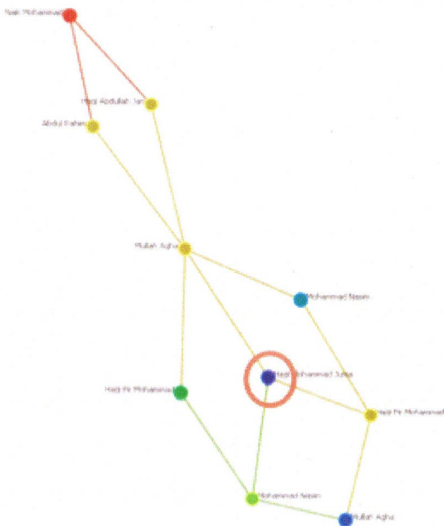
Commonality between Tribes



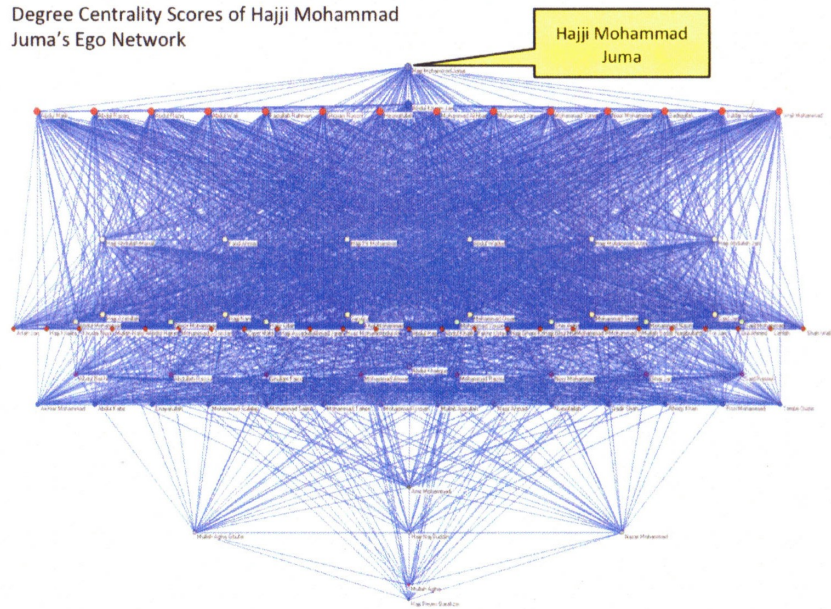
Social Network Analysis
provided *for the first time*
empirical evidence used to
understand the tribal
networks

Moving beyond key leader identification

Khakrez - Hajji Mohammad Juma's network



Degree Centrality Scores of Hajji Mohammad Juma's Ego Network



Analytic methods enabled the commander to identify structurally equivalent actors – *something not possible before.*

Interagency Feedback

“One of the main things I like about the capability is that the material presented **exactly coincides** with the *understanding* that I gained from my experience in this region, here in Afghanistan for three years, and 36 years of USDA experience in the field working with tribes and clans in the U.S.”

--Jim Green, SOTF-S **USDA Agricultural Advisor**

“I have worked in this district for almost a year, and the products depicted using Lighthouse **directly coincide** with my own conceptual *understanding* of the communities in this district—*products which were developed in only two weeks time by an operator new to the area.*”

--George Hale, SOTF-S **USAID Developmental Advisor**

Questions?