

Mobile SCAT Data Management and Mapping System to Support Oil Spill Response Teams

By

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Overview

- 1. Benefits of mobile apps for SCAT
- 2. Coral
- 3. Field tests
- 4. Future developments
- 5. Conclusion
- 6. Questions



Benefits of mobile apps for SCAT

• Reduce amount of equipment needed



Increase data protection



Redundancy



Access control

Encryption



Benefits of mobile apps for SCAT

• Reduce likelihood of errors

SCAT data flow without mobile app

Observation —— Field book —— SOS Form —— Database

SCAT data flow with mobile app

Observation — Database

Hypothesis

One (1) error will occur every 10,000 data transfer



Benefits of mobile apps for SCAT

Probability that database contains no error

---Without app ---With app



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Coral

• Description

Coral is a native **Android mobile app** for SCAT data management.

• Intended users

Coral is designed to be used on the field by **SCAT teams** and in the command center by the **decision makers**.

• Development orientations

Coral is developed to be **practical**, **reliable** and **innovative**



- 1. Mobile mapping
- Coral is based on a custom **mobile GIS** framework
- Produces **interactive maps** on the mobile device
- Uses the Google Maps API
- Import custom base maps





- 2. Capture field data
- Create divisions and segments during pre-segmentation
- Conduct **surveys** and add oiling **zones** and **pits**
- Automatic data validation





- 3. View data
- Easy access to the data
- Interactive map zooms on current structure
- Thematic icons help you find the right information





- 4. Take georeferenced pictures
- Use the integrated camera while **inside** the app
- Pictures are automatically georeferenced
- Pictures accessible in a photo gallery
- Pictures are also accessible on the map





- 5. Reports
- Automatically **generates** reports about the spill
- Table or pie chart view

Coral			9 🛇 🖘 🛆 🛢 90				
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ontamination per division						Chart view	
Division	Area (Km²)	Heavy (m)	Moderate (m)	Light (m)	Very Light (m)	No Oil (m)	
А	1.04	105.8	328.4	0.0	195.2	712.3	
В	1.07	411.5	334.5	0.0	0.0	552.4	
С	0.88	386.8	0.0	0.0	0.0	679.1	





- 6. Server synchronization
- Data is **synchronized** between mobile devices
- Real-time data transmission
- Automatic data **backup**





Field Tests

Environment Canada Fogo Island, Newfoundland, Canada 26 - 30 May 2014

Technical constraints

- No internet connection on the field
- Rough shoreline
- Large data set of segments



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Field Tests

Feedback

- **Pre-loading** of base maps in cache enough for field data capture
- 7" screen tablet (Nexus 7) better than 10" screen tablet (Xperia-Z10)
- Custom importation of segments into the app and segments simplification



Next Field Test

British Columbia Ministry of Environment Coquitlam, BC, Canada 24 - 26 March 2015

- 12 mobile devices connected to a server
- Riverbank form added to Coral
- Training module to assist SCAT training and formation



Future development

- Georeferenced videos
- Web map interface on the server
- Increase compatibility with multiple import and output formats
- IOS and Windows versions

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Conclusion

- Mobile apps could introduce a lot of **benefits in the SCAT process**
- Coral is a great tool for **field** data capture and is also useful for the decision makers in the **command center**
- Field tests have shown that it is **simple for SCAT members** to switch to a mobile based system for SCAT
- We keep adding features to Coral and we greatly appreciate your suggestions



Questions

Chaac's team thanks you for your interest!











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