Creating and Evaluating a Collaborative Web Mapping Platform

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Vision
Background & Research
Project Goals
Prototype Specifications
Outcomes
Timeline
"Where have we been?"
Collaborative Mapping

"Where have we been?"

"Where should we go?"

User Roles

Communication

Assignment

Documentation
1. Mitigate risk
2. Identify hazards
3. Reduce loss
1. Targeted recruitment
2. Case assignment
3. Queue mapping
4. Property reporting
5. Visual context
Figure 11. Media disruptions within the FbSC processes showing the actual state (now).

(Aztl et. al, 2019)
Figure 1. Technical open-source workflow for creating a role-tailored map dashboard.

(Aztl et. al, 2019)
Figure 12. Reduction of media disruptions within the FbSC processes by using the role-tailored map dashboard prototype (then).
"The idea is to put the users and their roles as well as their daily working tasks in the foreground and to build the map dashboard around them."

- Atzl et. al (2019)
“GIS: Integrating Our World”

"... explores how geospatial technology can integrate everything and engage everyone to overcome unprecedented global challenges..."

- Esri User Conference 2020
GeoNode

- Geospatial Content Management System (GeoCMS)
- Open Source Geospatial Foundation (OSGeo) project
- Platform for deploying spatial database infrastructures (SDI)
- User profiles “facilitate the use, management, and quality control of the data”
- Disaster risk management

1. From https://docs.geonode.org/en/master/about/index.html
GeoNode

Architecture

(Bhattacharya et. al, 2014)

(Corti et. al, 2019)
Welcome
GeoNode is an open source platform for sharing geospatial data and maps.

Get Started »

Search for Data.

Search

Advanced Search
Project Goals

- Open-source **Framework** development supporting role-tailored functionality
- **Prototype** development in GeoNode, testing, and evaluation
- **Evaluation** of GeoNode as a platform for providing collaborative functionality
- **Distribution** of prototype for use in the GIS community and beyond
Prototype

System Specifications
Mapping Screens

- Layer 1
- Layer 2
- Layer 3

User Role

Table Overview for the Layer
Case Information
Case Number
Client
Date Ordered
Due Date
Vendor Pay

Documentation

Case Documents
DocumentName.ext - User (Role) | Date
DocumentName.ext - User (Role) | Date
DocumentName.ext - User (Role) | Date

Upload a File...
User (Role): "Information regarding the status of a case."

User (Role): "Awaiting review by <user>."
Table Overview for the Layer (Selection Highlighted)

Clicking Link Pans Map and Shows Case Info

Inspector
- City
- Vendor Pay
- Max Case Allowance
- Current Assignments
- Territory Count

Case Queue
<table>
<thead>
<tr>
<th>Number</th>
<th>Due Date</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>Due Date</td>
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<td>Status</td>
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</tbody>
</table>

Queue View
Evaluation

✔️ Rating of Key Design Elements
  ✔️ Color Scheme
  ✔️ Icon Designs
  ✔️ Panel Arrangement
  ✔️ Map Appearance
  ✔️ Symbol Size
  ✔️ Header, Fonts

✔️ Level of Functionality & Effectiveness
  - Ease of Use
  - Communication
  - Collaboration

✔️ Overall Benefit & Open-Ended Feedback
  +/- Helpful?
  +/- Time?
  +/- Interest?
  🗣️ New information?
  🗣️ Best feature?
  🗣️ Anything missing?

(Atzl et. al, 2019)
(Veenendaal & Dhliwayo, 2013)
Evaluation

✓ Ease of Development
  ✓ Installation
  ✓ Reference
  ✓ Programming

✓ Level of Support for Key Features
  Default Views
  Panel Customization
  Document Attachment
  Case Notes
  Queue Assignment

✓ Invested Resources
  ⚒️ Hardware
  ⌚️ Time
  🔧 Expected Ongoing Maintenance
Outcomes

1

2

GeoNode

☑️

★ ★ ★ ★ ★
General Timeline

- **June**
  - Project Planning

- **July**
  - Framework Testing

- **Aug**
  - Proposal Presentation

- **Sept**
  - Prototype Development
  - Prototype Testing
  - Evaluation: Prototype
  - Evaluation: Framework

- **Oct**
  - NW PA GIS Conference
  - Feedback Integration

- **Dec**
  - Package Distribution

We are HERE
Presentation References


Additional References


