KwaZulu-Natal Office of the Premier eThekwini Floods

April 2022

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esri South Africa

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Overview

- The scenario
- The client
  - KZN Office of the Premier

premier
Department:
Office Of The Premier
PROVINCE OF KWAZULU-NATAL

- Key takeaways

Solution Components

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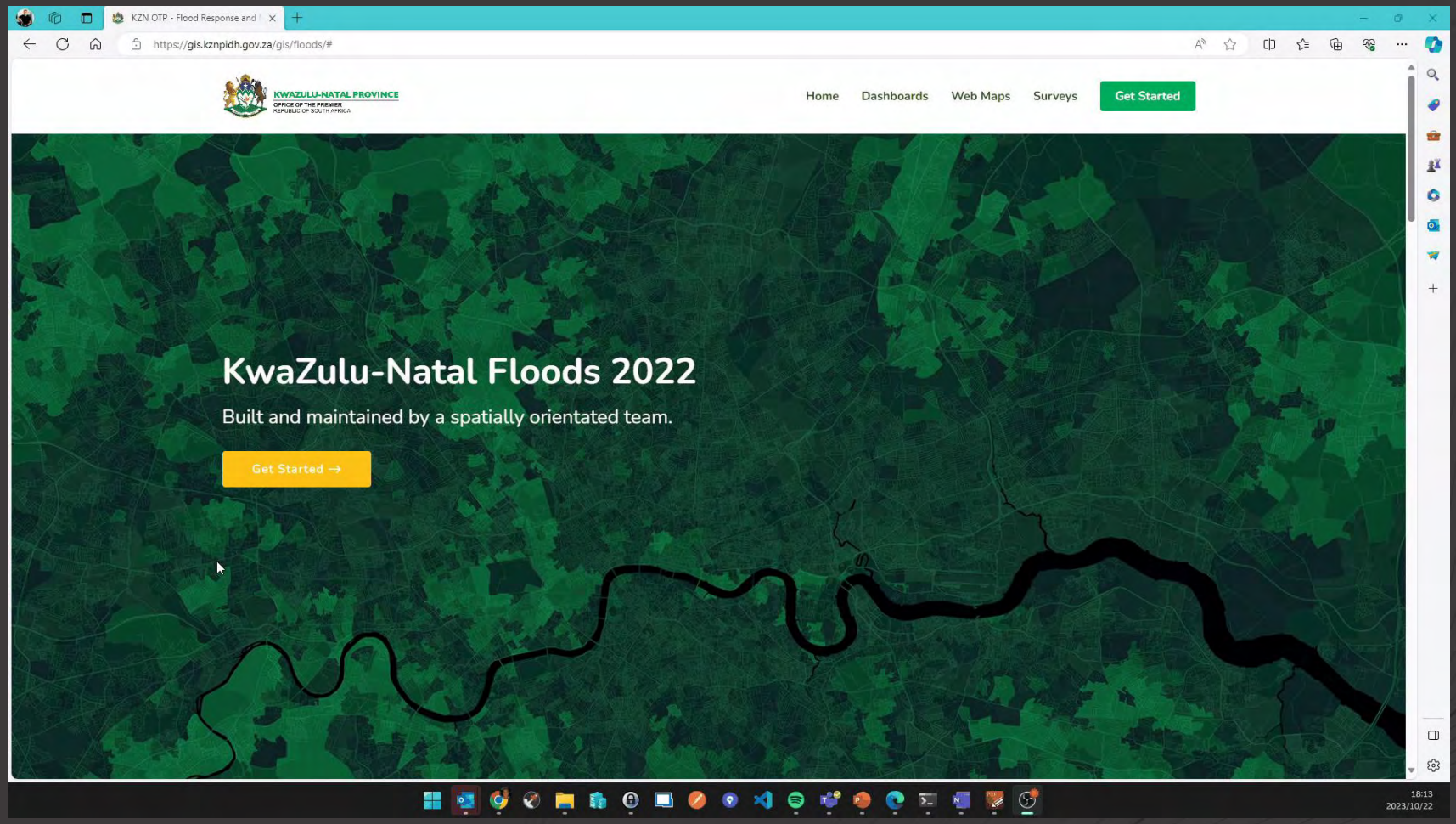
Landing Zone

- Landing Page
  - Sites vs Custom
- Time vs Productivity
- Single access point



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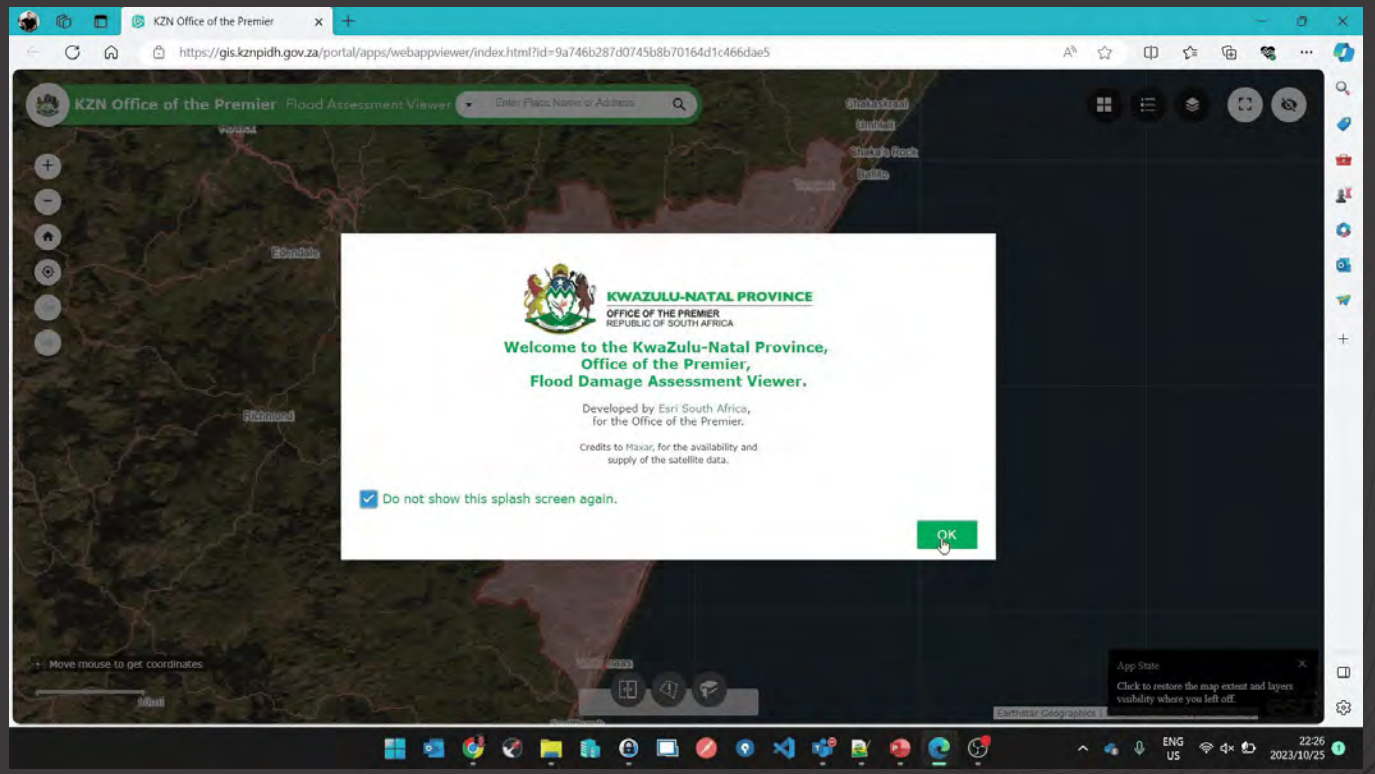
Flood Application Viewer

- Data availability from 14 April 2022
  - +/- 3 Days Post-Flood
  - Cloud cover a problem
- eThekwini main coverage (grey scale)
- Data provided by Maxar:
  - Open Data Offering
- Image tiles downloaded via script
- Mosaiced and cached
- Potential Reporting function



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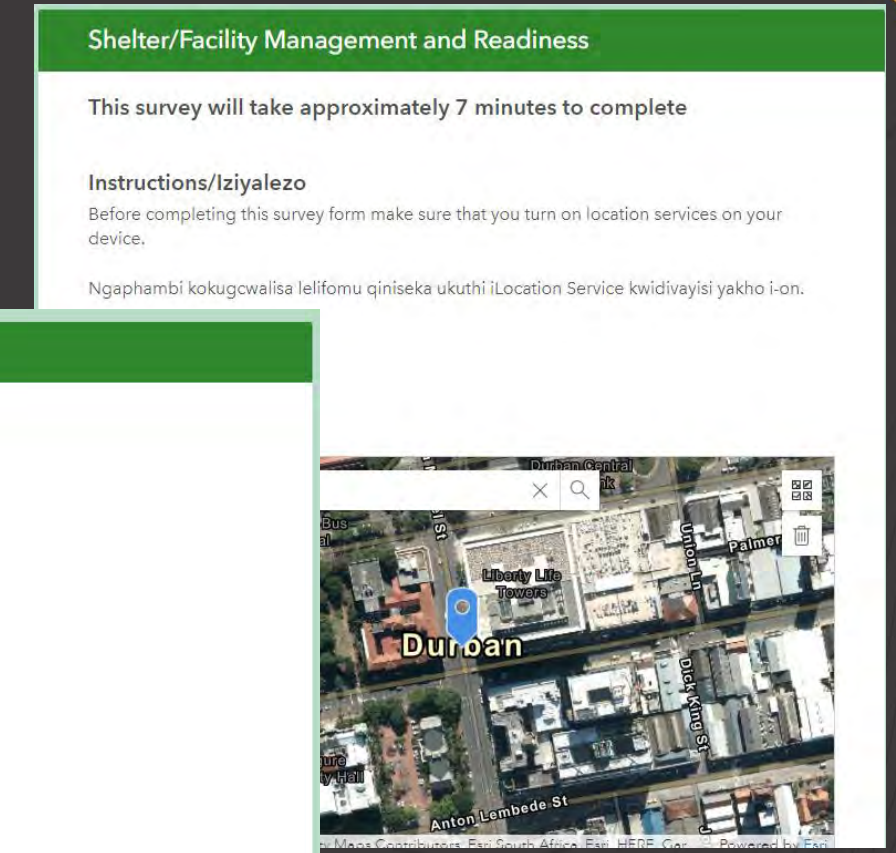
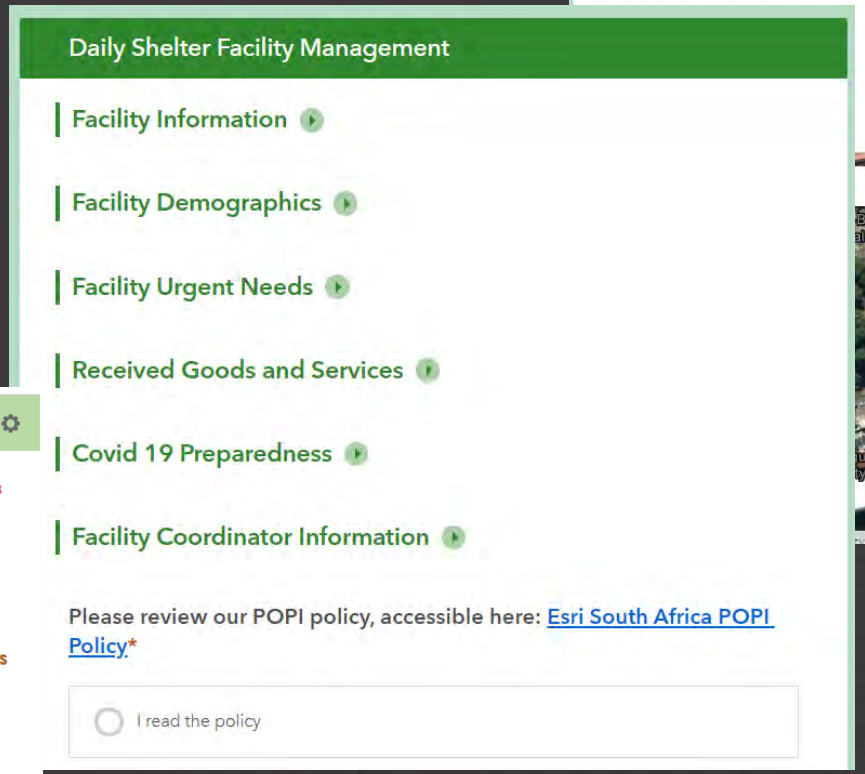
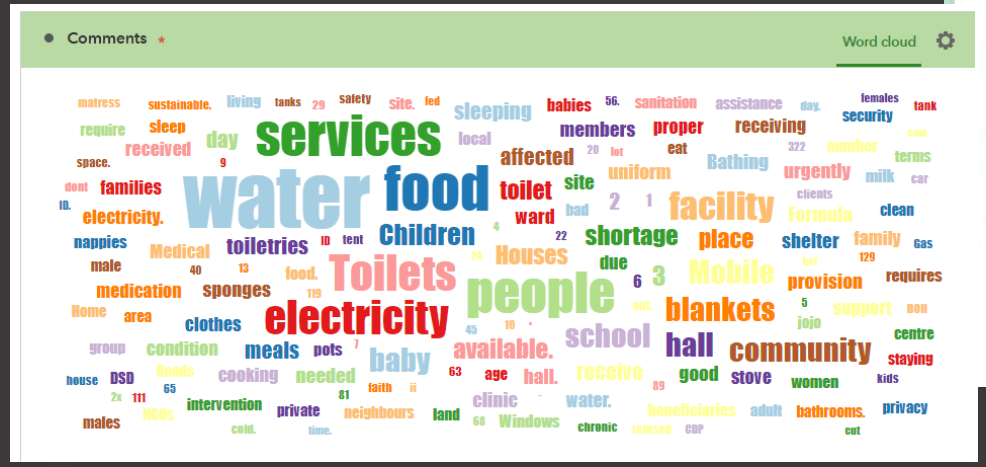
Field Capture and Reporting

- Shelter Surveys
  - Daily facility management
  - Potential Facilities and Readiness







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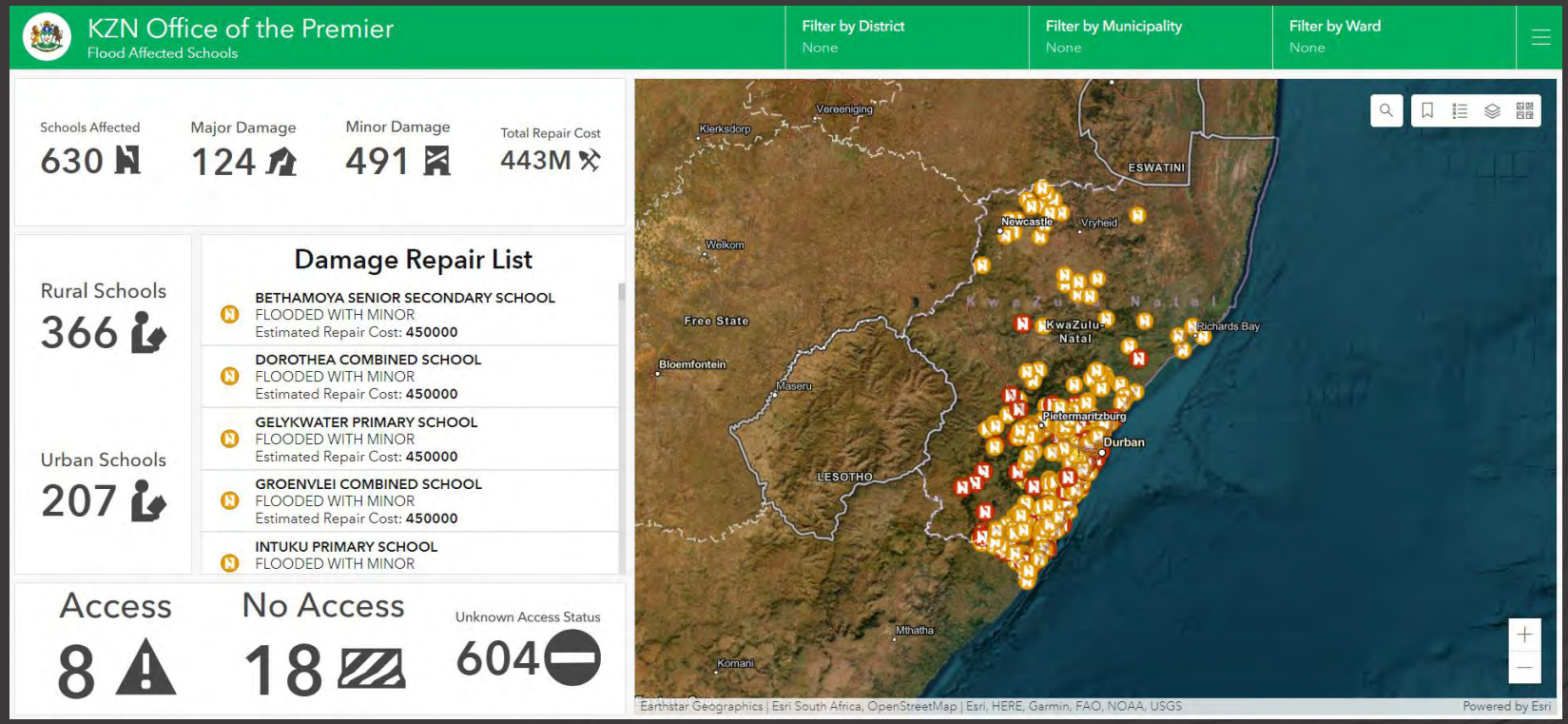
Field Capture and Reporting

- Shelter Surveys
- Shelter Dashboards
  - Shelter Readiness
  - Shelter Management
  - Potential Shelter Sites
- Damaged Infrastructure
  - Roads
  - Schools
  - Health Facilities
  - Sports, Arts & Culture
- Coastal Assessment



Automation & Integration

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Integration & Automation – Data Extraction and Processing

- Python Workflows:
  - Imagery:
    - Downloading - 10332 Image tiles
    - Processing and caching
  - Survey123 content updates
    - Linked CSV lookups
  - Service geometry updates
    - Data validation

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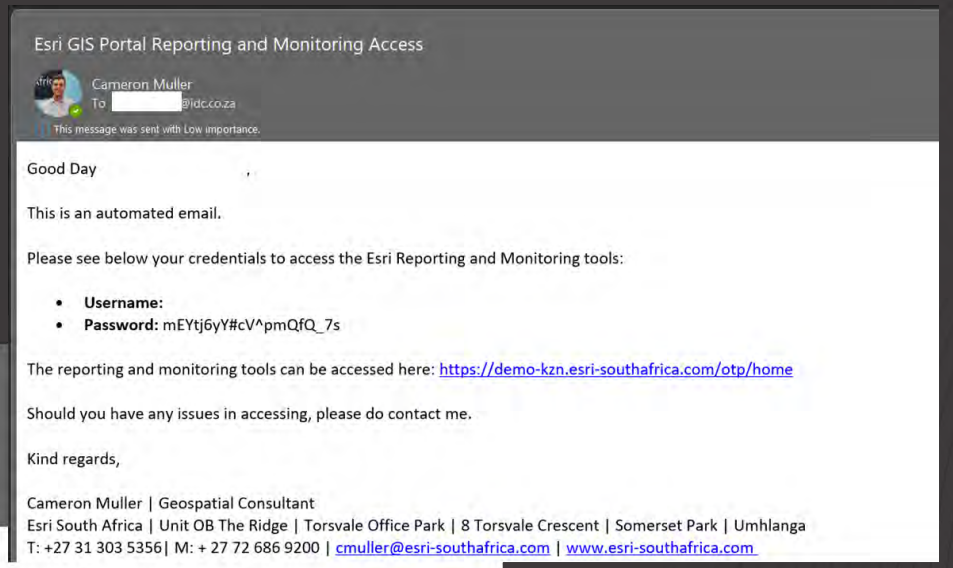
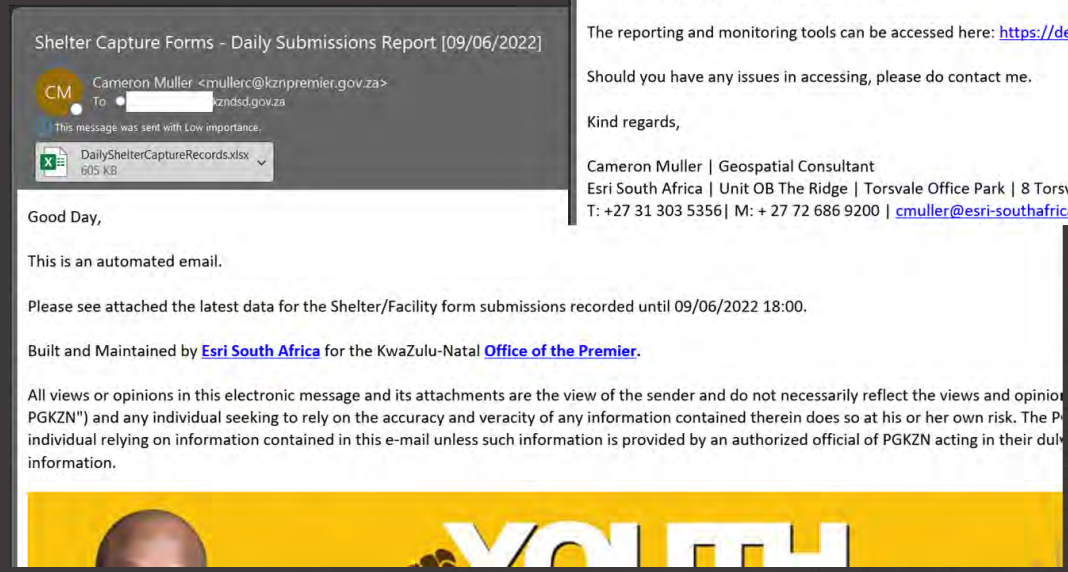
Integration & Automation – End User Communication

- Power Automate Workflows
  - Connector built for ArcGIS Enterprise
  - Daily emails and summary spreadsheets
  - Portal user credential emails





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Integration & Automation – Data Analysis/Business Intelligence

- Power BI Integration
  - ArcGIS Maps for Power BI
  - Custom rest API feeds
- Survey123 service views:
  - Direct rest API
  - Azure Data Factory to Azure Data Lake SQL
  - Accessed via Power BI Gateway

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Closing Summary

- Default disaster ready datasets need to be captured and maintained
- Imagery data accessibility, daily datasets
- Proactive instead of Reactive System needed
- The future GIS Professional
  - Be adaptable
  - Broaden skill sets

Questions

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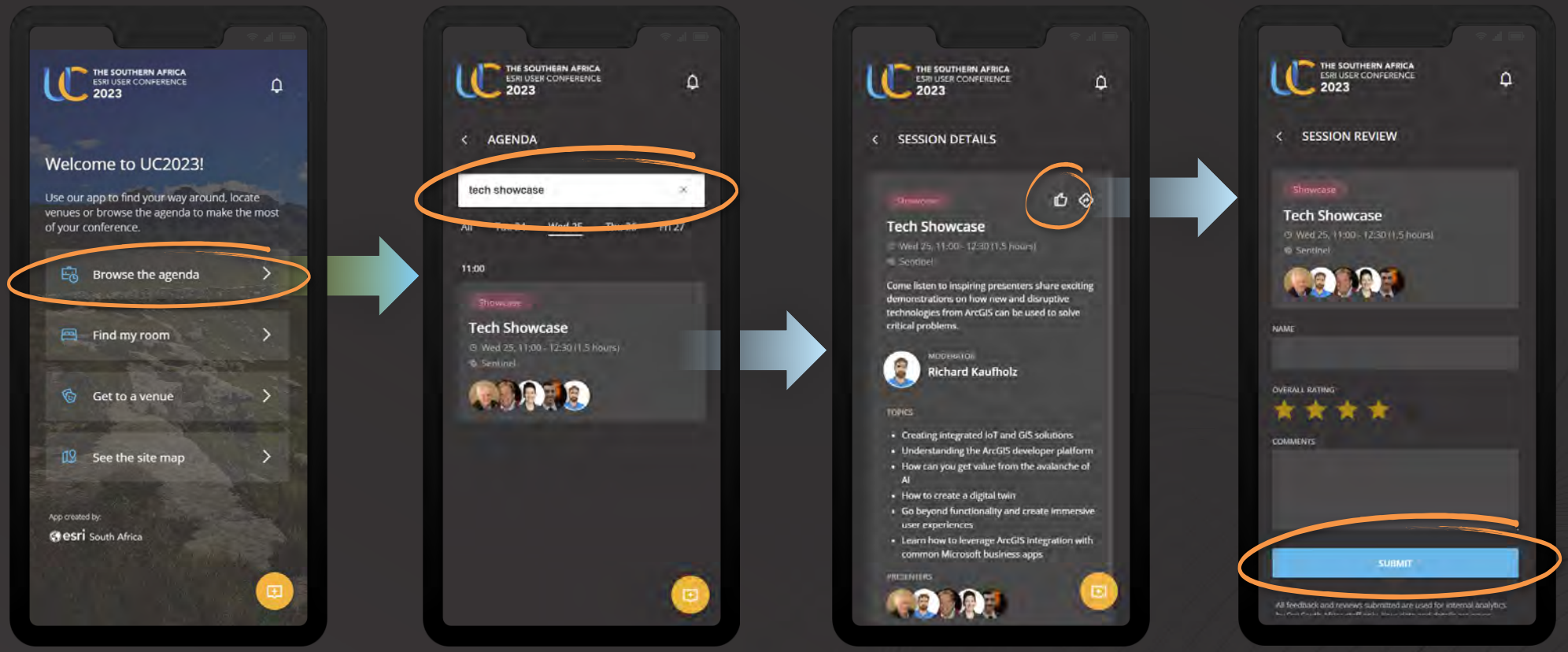

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CONNECTING COMMUNITIES