eMONTAGE (Edge Mission-Oriented Tactical App Generator)
End-User Programming on Smartphone in Tactical Environment

Objective
Enable end-users to adapt software on smartphones to meet specific mission needs.

Scenario
Imagine a U.S. soldier on patrol, deployed abroad, and walking into an unfamiliar village. Many pieces of information would be useful to that soldier in that situation. For example, it would be useful to know who the village elders are and to have pictures to identify them. It would also be useful to access information about previous spell out attacks, reports detailing the results of other contact that soldiers have had with villagers, and whether any friendly villagers speak English.

Challenges

- **Flexibility:** Current software on smartphones is not end-user tailorable beyond personalization
- **Centralization:** Centralized development cannot provide quick solutions to new warfighter requirements in the field
- **Lack of Programming Experience:** The core expertise of most end-users is not programming
- **Small Form Factor:** A smartphone has limited display area which makes it difficult to apply traditional end-user programming paradigms (e.g., drag-and-drop)
- **Confidence:** It takes too long to establish justified confidence in the functional and quality attributes of solutions developed in the field

Related Work

- **Map-based Interface**
  - Allow users to customize geo-location data on a map-based interface.

- **Auto-detection of Data Types**
  - Support data detectors that will automatically detect common data types (dates, time, location, etc.)

- **Support for Real-time and Distributed Data**
  - Build mechanisms to support connection with different backend data sources.

- **Filtering and Mashing of Geo-location data**
  - Support content-based filtering of distributed geo-location data-based using dynamic rules defined by end-users.

Next Steps and Considerations

- **Enable end-users to adapt software on smartphones to meet specific mission needs.**

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