PACT Analysis: Traffic Guidance TUIO Objects

**People**

**Traffic managers** who need a visualization tool to monitor and analyze real-time traffic conditions, helping them make informed routing decisions.

**User Characteristics**:

* Users are expected to have **basic to intermediate technical skills** with software interaction.
* Comfort with visualizing **maps, routes, and objects** on a screen for purposes like analyzing real-time traffic.
* Ability to understand **interface navigation** and **interpreting symbolic objects** within the application.

**Activities**

**Traffic visualization**: Users can use the app to visualize various maps and traffic data, including transportation hubs (bus, train stations) and vehicle icons.

**Interactive Navigation**: Users interact with a TUIO-enabled device, which generates interactive controls to simulate objects and cursors on the screen.

**Image Transformation and Map Navigation**: The app allows users to rotate objects and switch between different traffic maps, depending on the objects’ angles, aiding navigation decisions.

**Context**

* Used in labs and development environments, this app enables hands-on testing of TUIO-based touch interactions on interactive surfaces.
* Supports HCI research, product development, and educational use, serving as a foundational tool to test TUIO interactions before full application integration.

**Technology**

**Camera:** Captures the movement and interactions of TUIO objects.

**Server:** Processes and interprets TUIO data, distributing interaction outputs.

**TUIO Objects:** Physical objects used to interact with the system.

**Display Device:** Shows the visual output of the system to users.

**Persona**:

* **Name**: Alex Tawfiq
* **Job Role**: Traffic Management Specialist
* **Experience Level**: Intermediate technical skills, experienced with traffic monitoring tools and basic interactive applications
* **Background**: Alex has 5+ years of experience in traffic management, working with visualization software and real-time data to optimize traffic flow across urban areas. With a solid understanding of map-based navigation, Alex is used to interpreting icons, symbols, and data overlays on digital maps to make quick decisions.

**User Goals and Needs**:

* **Goal**: Utilize interactive TUIO objects and display devices to enhance understanding and control of live traffic maps, assisting in route optimization and traffic flow management.
* **Needs**:
  + Quick, intuitive visualization of traffic conditions through an interactive interface.
  + Ability to navigate and adjust map views in real-time to address emerging traffic situations.
  + Consistent, reliable functionality in an HCI lab or development environment to experiment with potential solutions.

**Challenges**:

* Adapting to new interactive features (e.g., TUIO objects) and understanding how they impact on-screen map transformations.