CS 297 Deliverable 1

Context-Sensitive help for Multimodal Dailogue.

Helen Wright Hastie, Michael Johnston, Patrick Ehlen. ICMI '02 Proceedings of the 4th IEEE International Conference on Multimodal Interfaces. 2002.

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Introduction

✤ Multimodal interface.

✤ Multimodal interface based Help system.

✤ MATCH (Multimodal Access To City Help).

✤ Help system ideas, their problems.

✤ MATCH Implementation.

How MATCH works

- How MATCH lets users interact.

- The majority of commands can be given by speech, by pen, or by a multimodal combination of speech and pen.

- A simple use case that leverages Multimodal interface to find a cheap Italian restaurant, or a information regarding a group of restaurants.
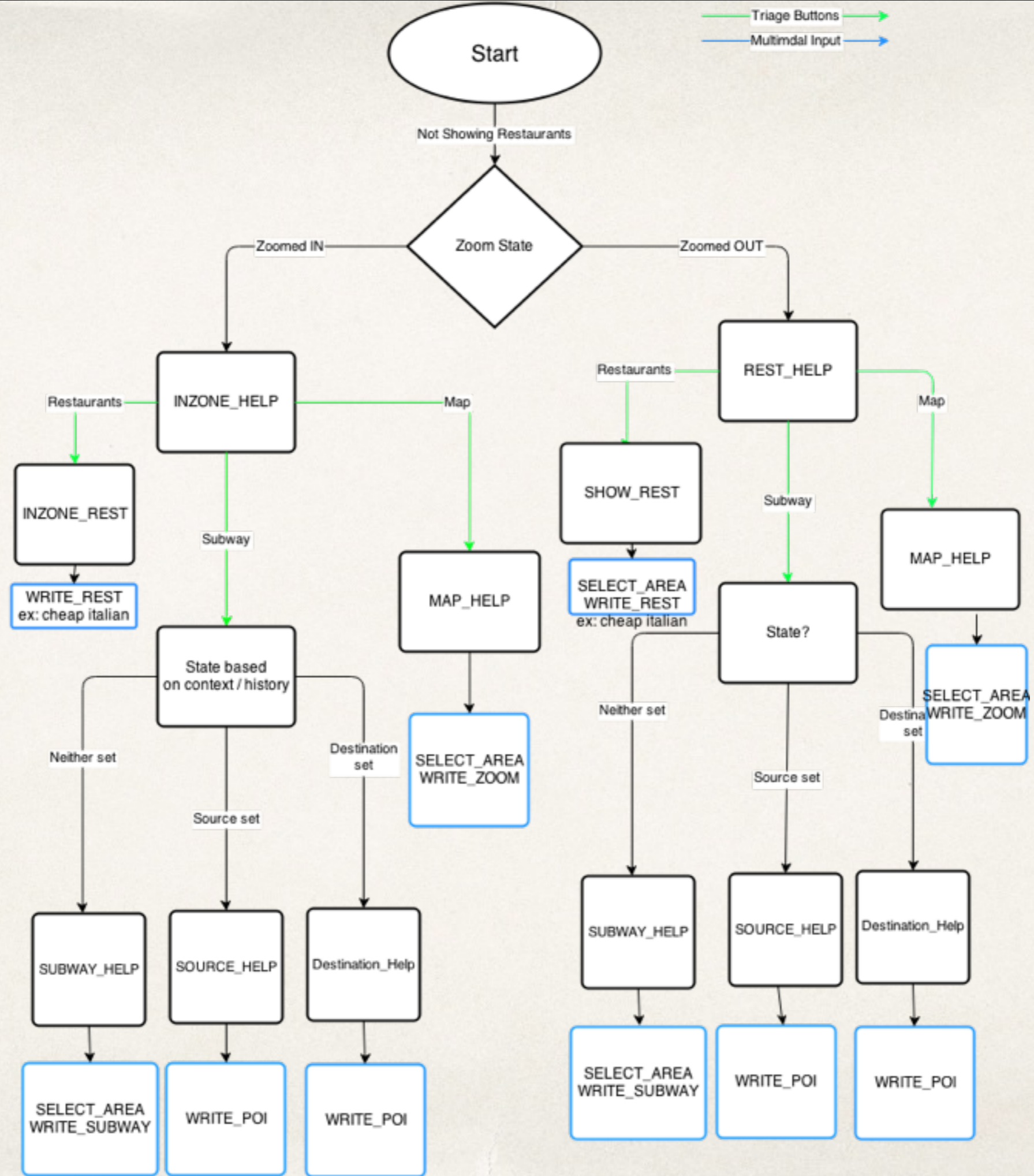

2. THE MATCH MULTIMODAL ARCHITECTURE
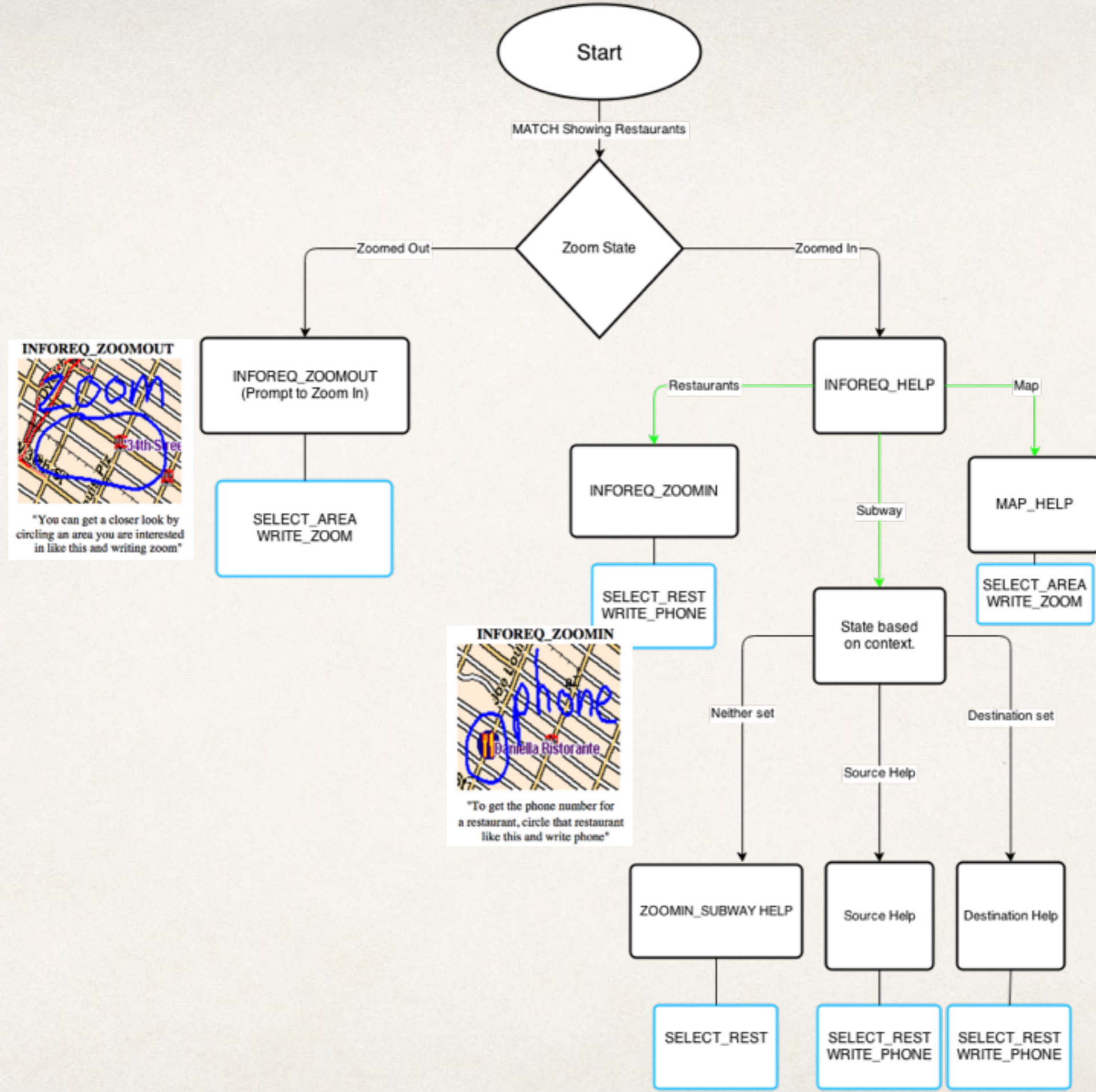
Fig. 1. MATCH running on Fujitsu PDA

Fig. 2. Unimodal pen command

Multimodal Help Design

* Independent module in the system.

* Invoked by user only.

* Three main areas where the user may need help in this application.

* The set of system HELP DIALOGUE MOVES is divided into queries and exemplary declaratives.

```
                                    ┌─────────┐
                                    │  Start  │
                                    └─────────┘
                                         │
                              MATCH Showing Restaurants
                                         │
                                         ◇
                                    Zoom State
                    Zoomed Out  /              \  Zoomed In
                               /                \
                  ┌──────────────────┐          ┌──────────────┐
                  │ INFOREQ_ZOOMOUT  │   Restaurants │INFOREQ_HELP │   Map
                  │ (Prompt to Zoom In)│◄─────────│             │────►
                  └──────────────────┘          └──────────────┘
                           │          ┌──────────────┐    │ Subway    ┌──────────┐
                  ┌──────────────┐    │INFOREQ_ZOOMIN│              │ MAP_HELP │
                  │ SELECT_AREA  │    │              │              └──────────┘
                  │ WRITE_ZOOM   │    └──────────────┘                   │
                  └──────────────┘          │                  ┌──────────────┐
                                    ┌──────────────┐           │ SELECT_AREA  │
                                    │ SELECT_REST  │           │ WRITE_ZOOM   │
                                    │ WRITE_PHONE  │           └──────────────┘
                                    └──────────────┘
                                                    ┌──────────────┐
                                                    │ State based  │
                                                    │ on context.  │
                                                    └──────────────┘
                               Neither set │    Source Help │    Destination set │
                        ┌──────────────────┐ ┌────────────┐ ┌──────────────┐
                        │ZOOMIN_SUBWAY HELP│ │ Source Help│ │Destination Help│
                        └──────────────────┘ └────────────┘ └──────────────┘
                        ┌──────────────┐ ┌──────────────┐ ┌──────────────┐
                        │ SELECT_REST  │ │ SELECT_REST  │ │ SELECT_REST  │
                        │              │ │ WRITE_PHONE  │ │ WRITE_PHONE  │
                        └──────────────┘ └──────────────┘ └──────────────┘
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INFOREQ_ZOOMOUT

"You can get a closer look by circling an area you are interested in like this and writing zoom"

INFOREQ_ZOOMIN

"To get the phone number for a restaurant, circle that restaurant like this and write phone"

References

✤ [Johnston2002] Context-Sensitive help for Multimodal Dailogue. Helen Wright Hastie, Michael Johnston, Patrick Ehlen. ICMI '02 Proceedings of the 4th IEEE International Conference on Multimodal Interfaces. 2002.]