I1 –

Sketches refer to gas vehicles, but similar concept applies to electric charging stations for electric vehicles.

Some of these functions can be accomplished through a voice/audial interface, rather than by visual display. For the purposes of this application, I sketched out what the visual displays might look like. However, in general I imagine the UI of the infotainment system to be highly voice based (with advanced voice recognition, using voice as the primary mechanism of communication between driver and car). Voice is ideal as it reduces distraction to driver; however, displays offer visualization of information, useful for maps.

I2 – Predictive Refueling System (PRS) lets user know how long until they run out of gas based on current and recent rate of fuel consumption, current and future traffic conditions, road conditions, closures.

If they are en route somewhere, user clicks on “Is my destination reachable?” to determine if they have enough gas to reach where they’re trying to get to.

I3 – PRS displays at what point the user will run out of gas, relative to their destination. If unable to reach destination with the amount of fuel available, user clicks on “Find gas stations en route.”

I4 – PRS shows user what gas stations are on the way to their destination, including the last station at which the user will be able to refill before running out of gas. User can filter results based on the price of fuel, distance to station, amount of traffic on the way, and/or past stations where they’ve bought gas. For instance, if they tend to buy gas at Shell stations, they can filter results to prioritize Shell stations. User clicks on one of the suggested gas stations to get more info.

I5 – PRS displays relevant info about the selected gas station, including how far away it is (in distance and time), whether or not it is open, and price per gallon.

User clicks on “Get me there” to get directions to selected gas station, or “Show more options” to get back to the previous slide.

I6 – (no text)

I7 – PRS alerts the user that they are low on gas and specified how many miles are left. User clicks on “Find nearby gas stations” to find places where they can refuel within range of current gas level.

I8 – If the user is not en route to a particular destination, PRS suggests the nearest gas station which the user can reach based on how much gas they have left in their tank. User clicks on “Get me there” to get directions to the selected station.

If the user doesn’t like the suggested option, they click on “Show more options.”

I9 – If the user is heading to a particular destination, PRS suggests a station that is on the way so that they aren’t taken out of their way.

I10 – If there are no gas stations within reach of the amount of fuel left, PRS indicates this. User clicks on “Call AAA” and PRS sends an automatic distress message to AAA, along with user’s name, vehicle information, location and membership number.