**Tardis Console**

A basic console will be required to demonstrate to our customers the Tardis. The Tardis is a box that everything flows through but even if it has a display many customers will not see the value and we need a way to demo the product. In all likelihood the people evaluating our products are looking at it from a console perspective and even though they would want to integrate it with their console we will need to demonstrate the capabilities they can take advantage of visually. We do not expect to sell consoles but we need a console view to show success and capabilities, even if they do not plan to use the functionality today. The console will facilitate the customer evaluation of the Tardis. The more function it is appears the more likely we are to generate sales. In general we need a basic console application to show managers a train location, be able to send and receive calls.

**Console Requirements**

* Call Tardis and talk using headset
  + I have a USR modem available we can use basic AT commands and has a separate voice port.
  + From a list or ideally from Icon
* Answer calls from Tardis and put call on hold awaiting console user answer
* Console display
  + Show all units in area
  + Unit position, health, messages
  + On a web page with Google Earth Embedded
* Need a SMS message format
  + Initially use same message format to and from Tardis

**Basic Functionality**

* SMS GPS details message to database
  + Can send a SMS message manually from phone for initial testing then get Tardis to auto generate SMS as required
  + Console receives SMS and puts data into a database
  + Console scans database and updates Icon data based on new data received
* Web page updates and displays Icon info as received into database, Icon color based on last message type received
  + Console will be able to select units they wish to monitor or a list of active trains is displayed. We may want to Geo Fence to show active units in or close to a consoles responsible area. We may do this also by simply limiting the view which will only show units inside the viewing area. This would mean you have a view per console operator.
  + Display Icon on Google Earth map showing position of device (from SMS message)
    - Ideally we can overlay tracks over Google Earth
  + Might be nice have an arrow showing direction, this I think could be a Icon orientation based on bearing or Icon selection based on device info
* Right click Icon to get
  + Device details (from latest SMS, position, speed, bearing) or
  + Call unit, autodial device
  + Send Commands or canned messages i.e. Turn on Call Dispatcher LED
  + History
* Auto answer call, display device call info on screen in call waiting area
  + Select call waiting and answer call or call terminated (timer to answer call within 2 minutes, if not answered placed in que to call back when required)

**SMS message format**

* What is the maximum number if characters per SMS message, assume 255,
* Make it easy to parse data by inserting “:” Colon Character between each data point. By not having a set number of digits we can modify protocol easily over time.
* Sample Format
  + Message Type: Device ID: Device Status: : Device IP: Device Latitude in decimal: Device Longitude in decimal: Device Speed in MPH: Device Bearing (true not magnetic): Call Type: Command 1: Command 2: Message: Reserved. Initially same message protocol and from Tardis
* Sample SMS message
  + TAR1A: 1234567890: 14038162797: Call-in: 54.5555: -114.6666: 47: 67: 8777A: None: None: MOW activities imposed mile 122 to mile 124
    - TARB1A – Message Protocol in use, if we change protocol format this will enable an easy message transition
      * Tardis Message Protocol Bidirectional Version 1 rev A
    - 1234567890 – Device ID, unique forever (9,999,999,999 billion devices) but allows each company to have a set number of available numbers.
    - 14038162797 – Device assigned Telephone number, this may change over time as customer may change carriers or units are put into storage and then reactivated.
    - Normal – Call Type such as
      * 911 or emergency
      * Call-in
      * Info
      * Priority
      * Stop
      * Etc.
    - 54.5555 – Latitude position in decimal degrees
    - -114.6666 – Longitude position in decimal degrees
    - 47 – GPS speed in MPH
    - 67 – Bearing in degree’s, true Azumuth, not magnetic
    - 8777A – Command to turn on Call Dispatch LED
    - None – If no additional commands need to be sent, other sample commands
      * Turn off Call home LED
      * Message acknowledged
      * Verify time
    - None – If no additional commands need to be sent
    - MOW activities imposed mile 122 to mile 124 – Message to be displayed on Tardis screen