Project Functional Requirements

1. The project should function as a basic RTS Game
   1. Look and feel
      1. The game will have basic 2D graphics
         1. The game will render at an adjustable size
         2. Units will be colour coded by owner
         3. Units will be forever square
         4. There will be a random space background image
         5. The game view will be able to navigate the full game map
      2. The game will be able to render SPL orders
   2. Game Functionality
      1. The Game World
         1. Resources
            1. There will be a random placing of resource points on the map
            2. There will be the ability to have consistent resource points by choosing to load a map
         2. Obstacles
            1. There will be a random placing of Asteroids (Obstacles) on the map
            2. There will be a chance of there being a randomly placed Nebula on the map
      2. Units
         1. Units will be able to move to a destination without getting stuck 90% of the time or greater
         2. Units will be able to shoot targets at a regular pace to deal a regular amount of damage
         3. Units will have a fixed amount of starting health based on their unit type
         4. Unit health will not be repairable
      3. Factions
         1. Factions will exert their own independent Influence on the map
         2. A single faction will represent a single player in the game
      4. Artificial Intelligence
         1. The AI will be autonomous
            1. Each player will expand continuously if not interfered with
            2. Each player will attack other players until there are none left if not interfered with
            3. Each player will attempt to defend itself unless interfered with
         2. The AI will be omnipresent with full access to the game world
         3. The AI will use the Strategic Planning Language (SPL) internally
            1. SPL will be placed into one or more queues for processing later by either the AI's analytical half or the result of Natural Language Input
2. The project should demonstrate that it is possible to merge NLP with RTS Game AI
   1. The AI will use SPL for its internal communications with agents of the game
      1. AI will be split in half, one side analytical generating SPL, one half operational that consumes SPL
   2. The project will be able to translate Natural Language Input into SPL
      1. The project will achieve 80% accuracy on understood instructions
      2. The project will be able to output failure to understand instructions
      3. The project will perform conversions of a single sentence of instruction in under 10 seconds on modern hardware
      4. The project will inject NL derived SPL into the AI's SPL Queue for consumption once fully approved
3. The project will demonstrate that co-operation with game AI and human players is possible
   1. The AI must be able to evaluate and accept or reject human orders based on some internal criteria
   2. The AI will have the ability to learn to trust the human based on a number of criteria:
      1. Success of human planned operations
      2. Value of traded items from human
      3. Assistance from human to AI
   3. The AI will have the ability to trade with human players
   4. The AI will be able to follow accepted human orders to the letter
   5. The AI will be able to slightly amend human orders and pass them back for approval