This is the file format definition. If you change the expectation of what is stored in a file or what should be stored, please update this document.

The general approach will be to maintain backwards compatibility with old file formats. All new save information should go below the version line. The version line indicates what version of the format you are working with. If that doesn’t exist, the system will assume it is a standard file.

# General Format Definition

|  |  |  |
| --- | --- | --- |
| Line | Description | Valid Values |
| 1 | Width (x-axis) of the space region | Min: 1, Max: 20 |
| 2 | height (y-axis) of the space region | Min: 1, Max: 15 |
| 3 | Number of drones | Min: 1, Max: 10 |
| 4 – Number of drones | Drone Definition (see drone line definition table) | (See drone table) |
| 5 | Number of suns | Min: 0, Max: 50% of space |
| 6 – Number of Suns | Location of suns (x, y coordinate for each sun) One line per sun | Valid X, Y location in space |
| 7 | Maximum number of turns for this run | Min: 1, Max: 200 |
| 8 | File format version. This is where it diverges from the standard file format | Integer (current version is 2 |
| 9 | Turn to stop on and save | Number < max turns 0 if no stop and save |
| 10 | Current turn | Which turn the simulation is on currently. 0 for new simulation |
| 11 – Number of drones | Fuel amount for each drone | Min: 0, Max: maxint |
| 12 | Charge rate | Min: 0, Max: maxint |
| 13 | Gallons per thrust | Min: 0, Max: maxint |
| 14 | Gallons per steer | Min: 0, Max: maxint |
| 15 | Gallons per scan | Min: 0, Max: maxint |
| 16 | Gallons per pass | Min: 0, Max: maxint |
| 17 | # of explored spaces | Int <= width \* height |
| 18 – Number of explored locations | Record of the explored spaces | Valid X,Y location in space |
| 19 | # of known spaces | Int < width \* height |
| 20 – number of known spaces | Record of the known spaces | Valid X,Y location in space |

# Drone Line Definition

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Value | X-Location | Y-Location | Direction | Strategy |
| Valid Values | < line 1 | < line 2 | See table | See table |

## Direction

## Which direction the drone is facing.

## The valid terms for direction {north, northeast, east, southeast, south,

## southwest, west, northwest}

## Strategy

* Zero (0) = select an action randomly
* One (1) = leverage environment info and drone collaboration to select “best” action
* Two (2) = allow the user to select an action via the input prompt (diagnostic only!)

# Example file

This is an example of a valid file. Comment are not allowed, so remove any // to create an actual valid file.

5 //Width (x-axis)

4 //Height (y-axis)

3 //Number of drones. There must be three drone lines

1,2,north,1 //drone 0: x, y, direction, strategy

0,1,northeast,1 //drone 1: x, y, direction, strategy

3,1,west,1 //drone 2: x, y, direction, strategy

3 // Number of suns. There must be 3 sun lines after this.

1,1 // sun 0: x,y location

1,3 // sun 1: x,y location

3,0 // sun 2: x,y location

3 // Max number of turns

0 // Turn to stop and save

0 // current turn

10 // Fuel for drone 0

5 // Fuel for drone 1

0 // Fuel for drone 2