**Level File Format**

Part i – Format Overview

A level file will contain at least three specifications structured within as described below:

1. Size of the map:

This will be represented as a two-number co-ordinate, separated with a comma (“,”) with the first number describing the width of the level, and the second describing its height.

1. Map information:

These lines (the number of which is equal to the level’s height), will map out the level using the character assigned symbols (see Part ii) to describe locations of basic cells types, such as walls, ground, player, items etc.

1. Player start point:

This next line will describe the player’s starting point upon loading the level. Note that the player’s starting co-ordinate may differ if they have already begun attempting the level. This line will be structured as follows:

**X,Y,START**

X and Y are coordinates of the player’s starting point.

1. Additional level information:

Any more lines added in the file will each describe additional information needed for the level and its entities, including doors, enemies, their types and other specifications needed. Each line should only describe one cell, and each cell should only have one line describing it.

Regardless of which cell they are describing, each line will be structured as follows:

**X,Y,TYPE,SUBTYPE,ADDITIONAL**

X and Y are coordinates of this cell’s initial position.

TYPE describes the type of object that is there. The four cases this can be are DOOR, ENEMY, TELEPORTER and KEY

SUBTYPE describes the subtype of the above-mentioned TYPE.

For DOOR, this is either TOKEN or KEY.

For ENEMY, this is LINE, WALL, DUMB or SMART.

For KEY, this is BLUE, RED, GREEN or PURPLE.

For TELEPORTER, this is an integer that acts as an ID for the teleporter.

ADDITIONAL is any further information that is needed about the cell. This part is will be NULL for KEY type cells and ENEMY types cells that are not LINE or WALL subtypes.

For a DOOR, KEY type cell, this information describes the colour of key required by the door (BLUE, RED GREEN or PURPLE).

For a DOOR, TOKEN type cell, this information describes the number of tokens required to open it (e.g. 3).

For an ENEMY, LINE type cell, this information describes the initial moving direction of the enemy (UP, DOWN, LEFT or RIGHT).

For an ENEMY, WALL type cell, this information describes direction of the wall it is following (RIGHT or LEFT).

For a TELEPORTER type cell, this information is the ID of another teleporter that this teleporter is paired to. A teleporter pair should only ever refer to one another in their descriptions.

Part ii – Cell Symbols

“#” - Wall cell. No Player nor enemy can traverse onto or through walls.

“ “ - Ground cell. Empty space where any enemy or player may traverse onto.

“G” - Goal cell. This is the cell which players much reach in order to complete the level.

“A” - Acid cell. This cell is considered a Wall cell to enemies and will kill the player if they have not collected a Hazmat Suit (below).

“W” - Electrical Wire cell. This cell is considered a Wall cell to enemies and will kill the player if they have not collected Rubber Shoes (below).

“-“ - Coloured Door cell. This door cannot be traversed until a key of the corresponding

colour has been collected by the player.

“=” - Token Door cell. This door cannot be traversed until enough Energy cells (tokens) has been

collected by the player.

“E” - Enemy cell. This cell contains an enemy, if a player and enemy are ever on the same

cell, the player is killed.

“T” - Teleporter cell. When a player moves onto a teleporter, they will be teleported off

to the teleporter’s pair on the opposite side. These are considered ground cells to enemies.

“H” - Hazmat Suit cell. A collectable that helps a player to traverse over Acid cells without being

killed.

“R” - Rubber Shoes cell. A collectable that helps a player to traverse over Electrical Wire cells

without being killed.

“K” - Key cell. A collectable key card of a specific colour that will open Coloured Door cells of the

same colour.

“O” - Energy cell. A collectable token that will open Token Door cells when the required number of

Energy has been collected.