

# Appendix B

## Game Fairness Objectives

### 1 Game Fairness Objectives

The following minimum requirements for game fairness objectives and their intent are to be achieved. The intent of the objectives is to ensure that the probability distribution of each random event within a game is:

1. as it appears to the player,
2. as it is represented to the player, and
3. as it could reasonably be inferred by the player.

The objectives are defined separately for the following types of random event.

- (1.1) Simulations of real events of chance.
- (1.2) Simulations of non-chance real events of displayed probabilities.
- (1.3) Simulations of non-chance real events of non-displayed probabilities.
- (1.4) Presentation of non-real events of displayed probabilities.
- (1.5) Presentation of non-real events of non-displayed probabilities.

#### 1.1 Simulations of real events of chance

For the case of games that include simulations of, representations of or are analogous to, real-world events of chance, the probability of each possible event outcome must equal the probability of that event outcome in the corresponding real-life situation.

Examples are simulations of drawing a card or sequence of cards from a card deck, drawing a ball or a sequence of balls from a barrel, spinning a wheel or reel, rolling a die, tossing a coin.

#### 1.2 Simulations of non-chance real events of displayed probabilities

For the case of games that include simulations or representations of real-world events which in the real-world are not events of chance and where the relative probabilities of each outcome are in some manner displayed or defined, it is recommended, but not mandatory, that the probability of each possible event outcome be in relation to the displayed or defined outcome rates, having regard if and as necessary to the "hold-percentage" of the game.

Examples are simulations of sports games, such as football, golf, tennis, horse racing.

### 1.3 Simulations of non-chance real events of non-displayed probabilities

For the case of games that include simulations or representations of real-world events which in the real-world are not events of chance and where the relative probabilities of each outcome are not displayed or defined, it is recommended, but not mandatory, that the probability of each possible event outcome be equal, i.e. a uniform distribution apply, having regard if and as necessary to the "hold-percentage" of the game.

Examples are simulations of sports games, such as darts, but where the probability of the dart landing in any particular cell is not in any way indicated.

### 1.4 Presentation of non-real events of displayed probabilities

For the case of games that include simulations or representations of non-real events and where the relative probabilities of each outcome are in some manner displayed or defined, it is recommended, but not mandatory, that the probability of each possible event outcome be in relation to the displayed or defined outcome rates, having regard if and as necessary to the "hold-percentage" of the game.

Examples are games that are like sports games, but where the graphics do not relate in any way to any real-world situation, such as "space age" or "science-fiction" games.

### 1.5 Presentation of non-real events of non-displayed probabilities

For the case of games that include simulations or representations of non-real events and where the relative probabilities of each outcome are not displayed, it is recommended, but not mandatory, that the probability of each possible event outcome be equal, i.e. a uniform distribution apply, having regard if and as necessary to the "hold-percentage" of the game.

Examples are icon selection games similar to (for example) a spinning reel game, but where no physical icon selection device is depicted or inferred and the random selections generated by the computer are displayed directly onto the screen.

## 2 Consequences of Game Fairness Objectives

To illustrate the application of the game fairness objectives, their interpretation and consequences for various types of game are given below.

### 2.1 Simulations of real events of chance

#### 2.1.1 Card games

The consequences of objective 1.1 for games depicting cards being drawn from a pack are the following requirements.

- (1) Cards must be drawn fairly from a randomly shuffled pack consisting of the full set of cards applicable to the game depicted.
- (2) Cards once removed from the pack must not be returned to the pack except as provided by the rules of the game depicted.
- (3) The pack must not be reshuffled except as provided by the rules of the game depicted.
- (4) As cards are removed from the pack they must be immediately used as directed by the Rules of the game - i.e. are not to be discarded due to adaptive behaviour by the EGM.

### **2.1.2 Ball drawing games**

The consequences of objective 1.1 for games depicting balls being drawn from a barrel (e.g. Keno) are the following requirements.

- (1) Balls must be drawn fairly from a randomly mixed barrel consisting of the full set of balls applicable to the game depicted.
- (2) Balls once removed from the barrel must not be returned to the barrel except as provided by the rules of the game depicted.
- (3) The barrel must not be re-mixed except as provided by the rules of the game depicted.

### **2.1.3 Roulette/wheel/reel spinning, dice rolling, coin tossing games**

The consequences of objective 1.1 for games depicting any of:

- (a) the spinning of reels (such as conventional "slot machines" or "poker machines"),
- (b) the spinning of wheels (such as roulette),
- (c) the rolling of dice,
- (d) the tossing of coins,
- (e) other similar depictions,

are the following requirements.

- (1) For each reel/wheel/dice/coin/etc. depicted, the probability of any one face appearing must be as for the actual physical device (e.g. 1/20 for a 20 faced reel or wheel; 1/6 for a 6 faced dice; 1/2 for a coin). The Director may approve "virtual reel extensions" for physical reel EGMs (i.e. stepper motor machines) but only if the probability of each virtual reel position is identical (e.g. a 22 position physical reel is mapped into a virtual reel of 33 symbols - the probability of each virtual position must be 1/33). The virtual mapping of such physical reels must be approved by the Director.
- (2) The behaviour of each reel/wheel/dice/coin/etc. must be independent of (i.e. uncorrelated with) all other reels/wheels/dice/coins/etc..
- (3) The behaviour of each reel/wheel/dice/coin/etc. must be independent of (i.e. uncorrelated with) its previous behaviour.

## 2.2 Depiction of non-chance and/or non-real events

Where a game includes animations depicting either:

- (1) real-life situations that in real-life are not in fact events of chance but in the game are events of chance or
- (2) non-real situations which in the game are events of chance,

the consequences of objectives 1.2 to 1.5 are fully defined within the appropriate objective.

The general goal recommended by the Director is to design these type of games so that the probability of winning on any outcome is roughly inversely proportional to the prize that is being paid.