This is the specification for RealFlow BIN particle files

(Begin of file)

```
[long int]          ; verification code = 0xFABADA
[char]*250          ; fluid name
[short int]         ; version (current = 13)
[float]             ; scale scene
[int]               ; fluid type
[float]             ; elapsed simulation time
[int]               ; frame number
[int]               ; frames per second
[long int]          ; number of particles
[float]             ; radius
[float]*3           ; pressure (max, min, average)
[float]*3           ; speed (max, min, average)
[float]*3           ; temperature (max, min, average)
[float]*3           ; emitter position  ;; version>=7
[float]*3           ; emitter rotation  ;; version>=7
[float]*3           ; emitter scale     ;; version>=7
```

-> loop for <number of particles>

```
      [float]*3    ; particle position (XYZ-global)
      [float]*3    ; particle velocity (XYZ)
      [float]*3    ; particle force (XYZ)
      [float]*3    ; particle vorticity (XYZ) ;; version>=9
      [float]*3    ; normal vector (XYZ)      ;; version>=3
      [int]        ; number of neighbors      ;; version>=4
      [float]*3    ; Texture vector (UVW)     ;; version>=5
      [short int]  ; info bits                ;; version>=5
      [float]      ; elapsed particle time (age)
      [float]      ; isolation time
      [float]      ; viscosity
      [float]      ; density
      [float]      ; pressure
      [float]      ; mass
      [float]      ; temperature
      [int]        ; particle ID              ;; version<12
      [uint64]     ; particle ID              ;; version>=12
```

-> end loop

```
[int]                                   ; # additional data per particle ;; version>=6

-> loop for <number of additional data per particle>

      [int]             ; id of the data                ;; version>=6
      [int]             ; type of the data              ;; version>=10
      [int]             ; size of the data              ;; version>=6
      [char]*256        ; name of the data              ;; version>=13
      [int]             ; owner of the particle id      ;; version>=8
      [char]*256        ; owner of the particle name    ;; version>=6 && version<8

      -> loop for <number of particles>

            [bool]                                ; additional data?  ;; version>=6

            -> if there is additional data

                  [char]*(size of the data)       ; additional data   ;; version>=6

            -> end if

      -> end loop

-> end loop


 [bool]     ; RF4 internal data?            ;; version>=6

-> if there is RF4 internal data

      Information here is irrelevant outside RF

-> end if

[bool]      ; RF5 internal data?            ;; version>=11

-> if there is RF5 internal data

      Information here is irrelevant outside RF

-> end if


(End of File)
```

TYPE SIZE:

- [float]   = 4 bytes
- [int]   = 4 bytes
- [long int]   = 4 bytes
- [uint64]   = 8 bytes
- [short int]   = 2 bytes
- [char]   = 1 byte

- [bool] = 1 byte

NOTES:

1. To make BIN files readable by RF you must write a 0 (false) value in the "RF4 internal data" field and in the "RF5 internal data".

2. If you don't have additional data per particle just write a 0 value in the "# additional data per particle" field.
