File regarding the storage of rays

Two files are concerned :

frays.coor where you have coordinates of points

frays.tabl where you have pointers to track rays

frays.tabl : structure

each record is such that we have 3 integers stored in 4 bytes each

First record : read in binary format three integers nl,nlp,nls

nl=number of rays
nlp=number of P rays
nls=number of S rays

---> there is a check regarding the fact that nl=nlp+nls

Starting from the second record to the nl+1 record
you read three integers for a running index k

- pt_ray(k), ind_ray(1,k), ind_ray(2,k)

pt_ray(k) is the pointer to the position table
ind(1,k) is the source ID related to the k ray
ind(2,k) is the receiver ID related to the k ray

for the ray (k-1), the number of points is pt_ray(k)-pt_ray(k-1)+1
(be careful : we read the k information to get the length of the k-1 ray ..)

for getting the number of ray (k), you have to read the final record 2+nl
-pt_ray(1+nl), idummy,jdummy

frays.coor : structure

each record is such that you have 3 floats stored in 4 bytes each

For a given ray i, you may start to read the initial point at the source by reading
the record pt_ray(i) which gives the position of the source.

For the same ray i, you have to read « pt_ray(i+1)-pt_ray(i)-1 » records in order to
get the following points until the receiver.

False rays : if pt_ray(i+1)-pt_ray(i)=1, the ray has one point which has often a fake position
(-999.,-999.,-999.) when the ray tracing fails. You have to ignore this ray and you should not
trace it.

You may check, thanks to IDs of receivers and sources that you start at the good initial point and
you end up at the good final point : a safe way to check that things are OK.