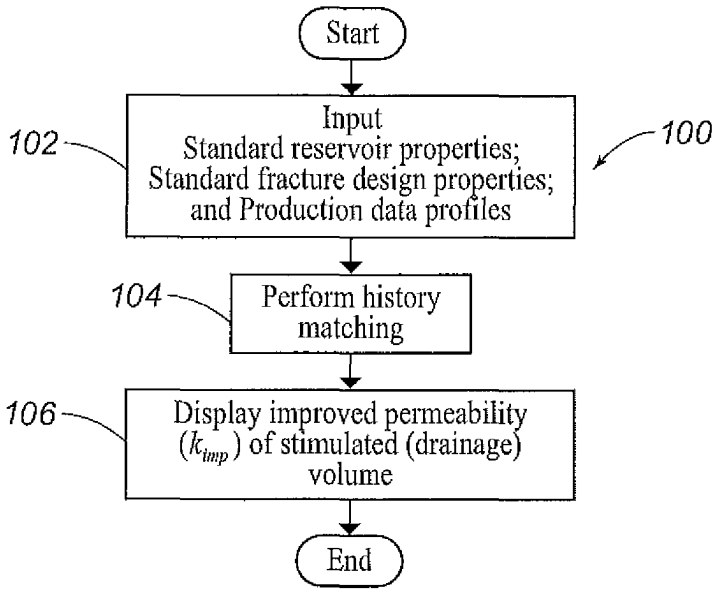
Start
Input
Standard reservoir properties;
Standard fracture design properties;
and Production data profiles
100
102
Perform history matching
104
Display improved permeability (k_{imp}) of stimulated (drainage) volume
106
End

FIG. 1

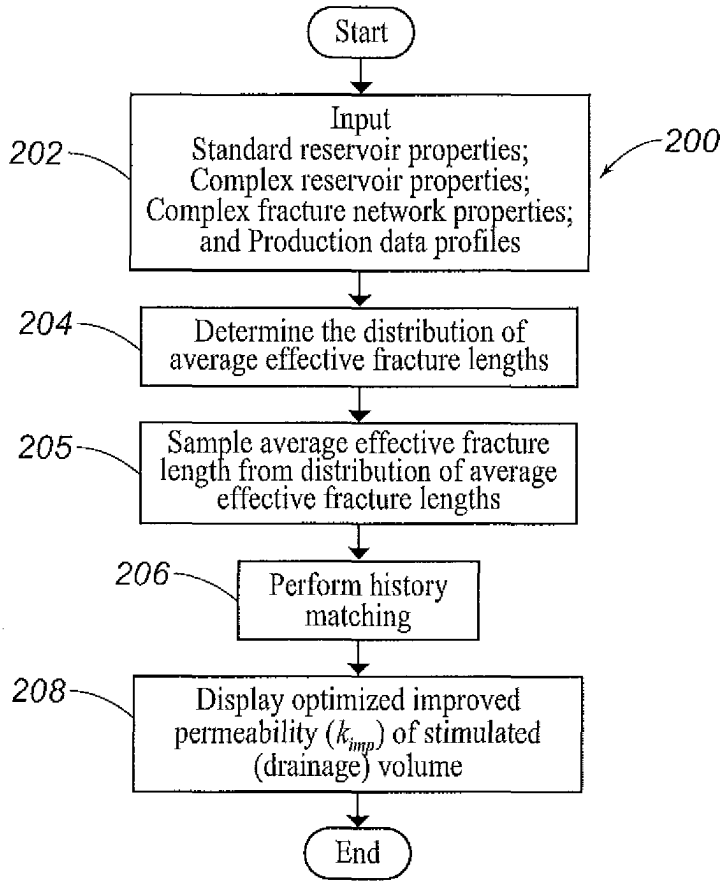
Start
Input
Standard reservoir properties;
Complex reservoir properties;
Complex fracture network properties;
and Production data profiles
200
202
Determine the distribution of average effective fracture lengths
204
Sample average effective fracture length from distribution of average effective fracture lengths
205
Perform history matching
206
Display optimized improved permeability (k_{imp}) of stimulated (drainage) volume
208
End

FIG. 2

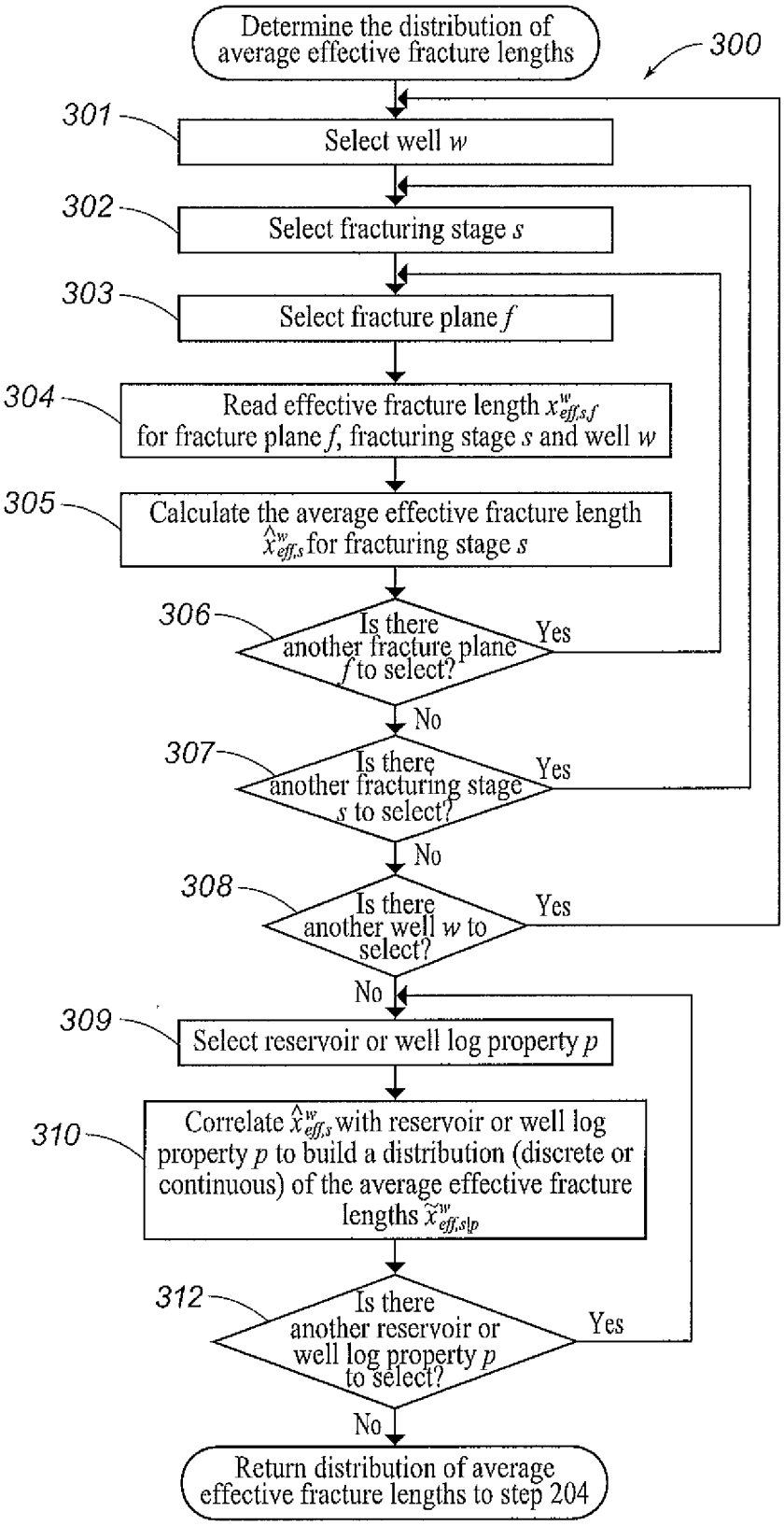
Determine the distribution of average effective fracture lengths
300
301
Select well w
302
Select fracturing stage s
303
Select fracture plane f
304
Read effective fracture length $x^{w}_{eff,s,f}$ for fracture plane f, fracturing stage s and well w
305
Calculate the average effective fracture length $\hat{x}^{w}_{eff,s}$ for fracturing stage s
306
Is there another fracture plane f to select?
Yes
No
307
Is there another fracturing stage s to select?
Yes
No
308
Is there another well w to select?
Yes
No
309
Select reservoir or well log property p
310
Correlate $\hat{x}^{w}_{eff,s}$ with reservoir or well log property p to build a distribution (discrete or continuous) of the average effective fracture lengths $\tilde{x}^{w}_{eff,s|p}$
312
Is there another reservoir or well log property p to select?
Yes
No
Return distribution of average effective fracture lengths to step 204

FIG. 3

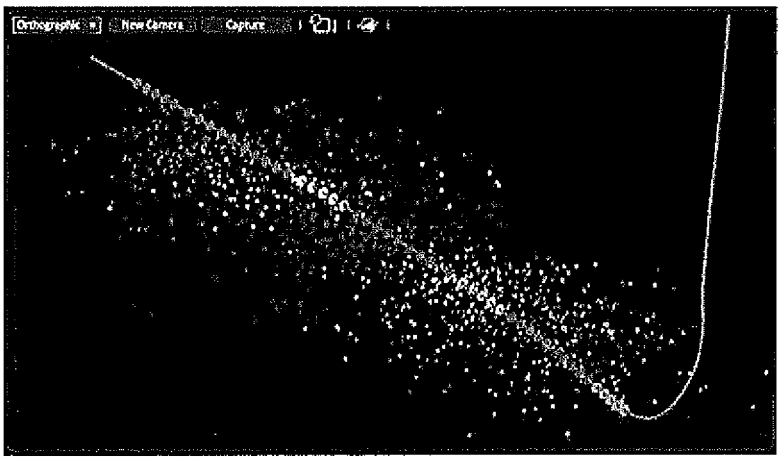

FIG. 4A

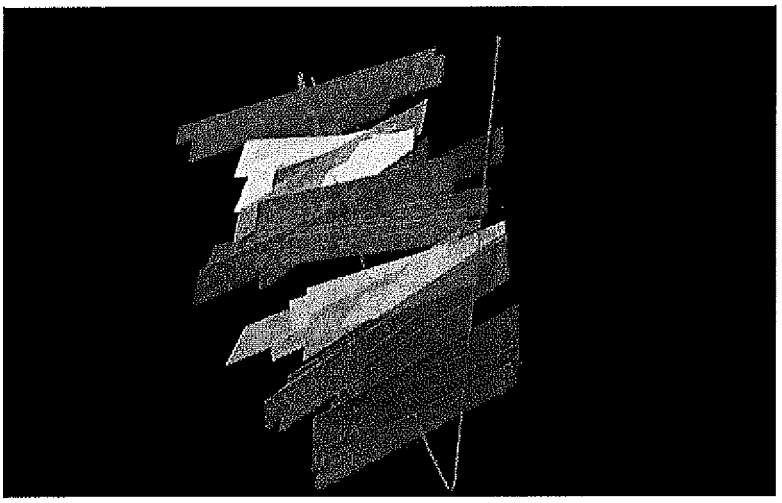

FIG. 4B

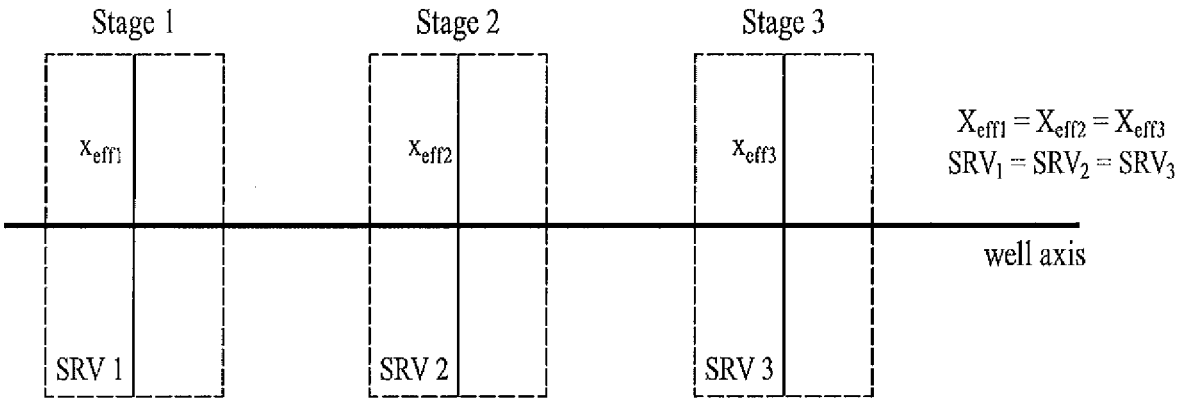

FIG. 5A

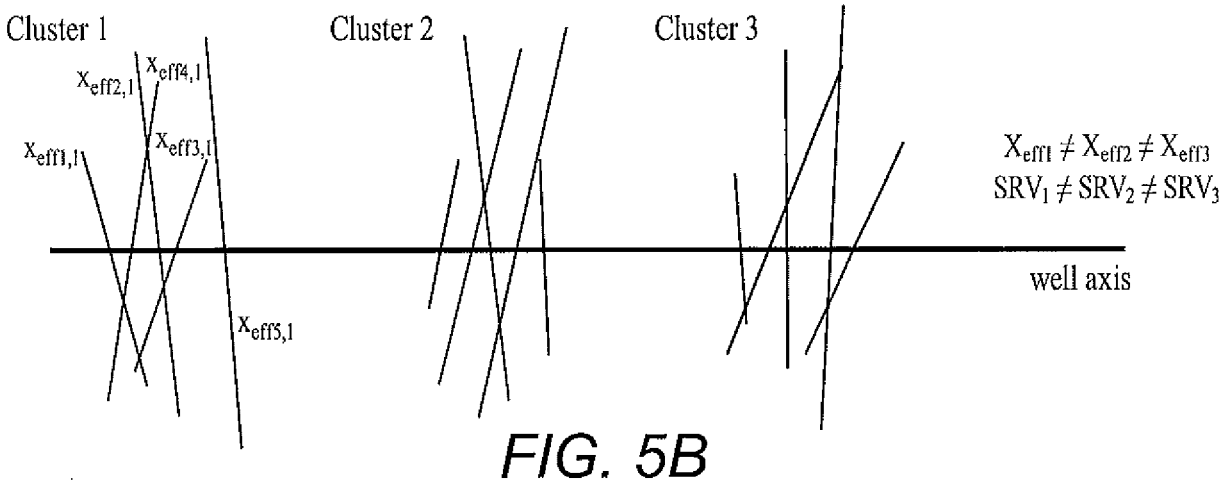

FIG. 5B

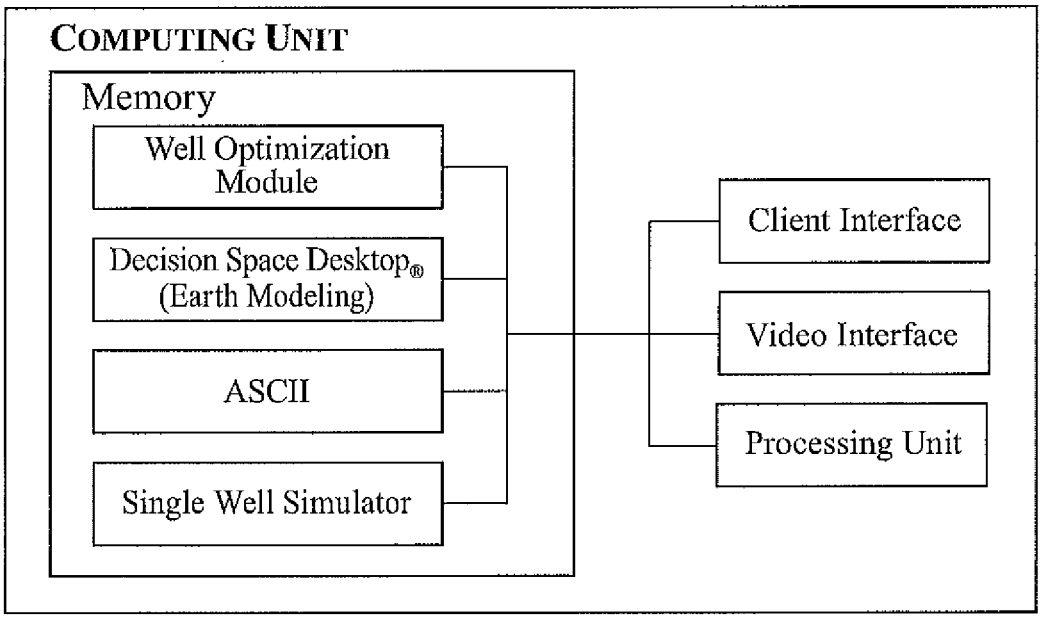

FIG. 6