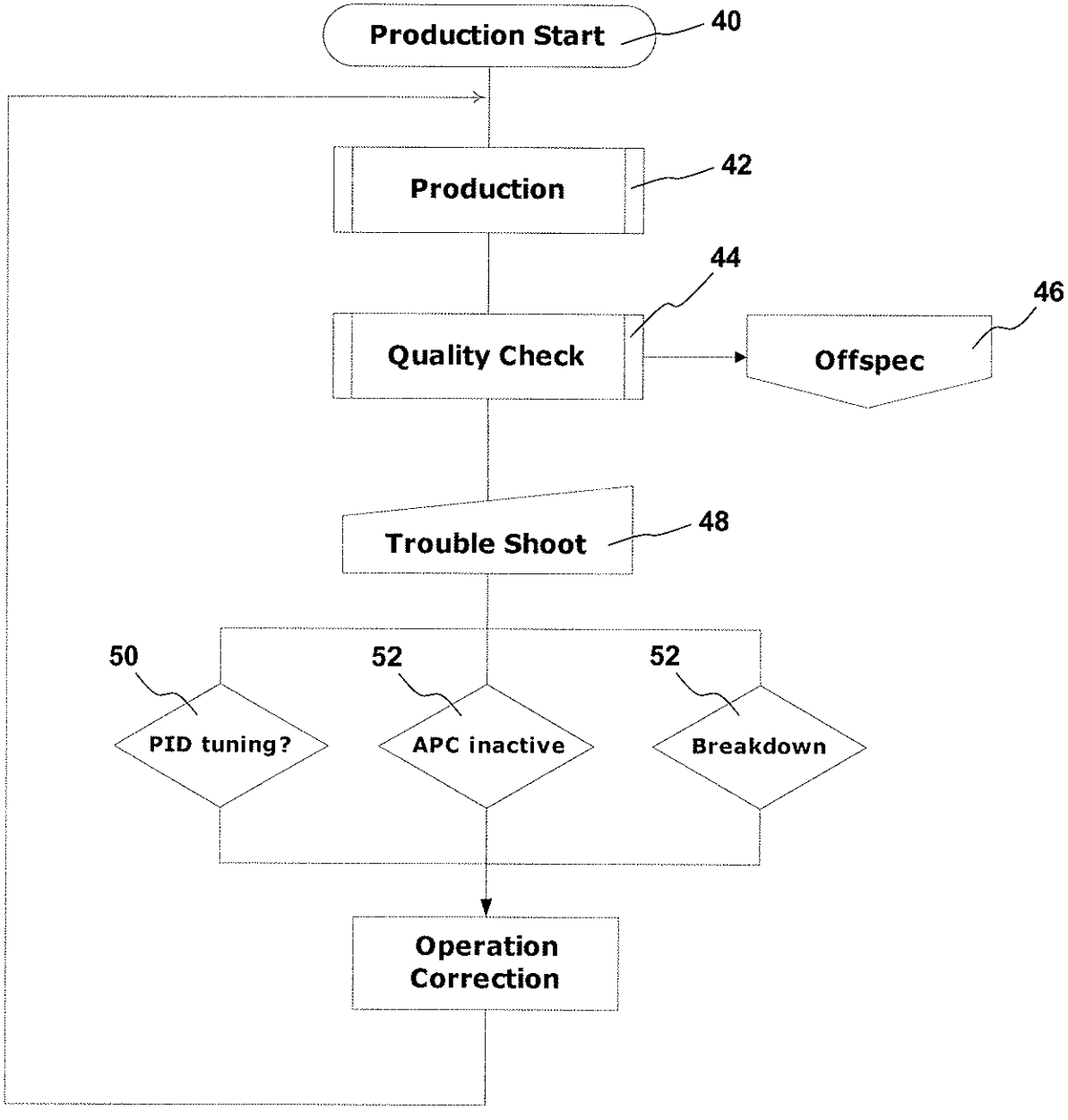

Production Start
40
Production
42
Quality Check
44
Offspec
46
Trouble Shoot
48
50
PID tuning?
52
APC inactive
52
Breakdown
Operation Correction

FIG. 1

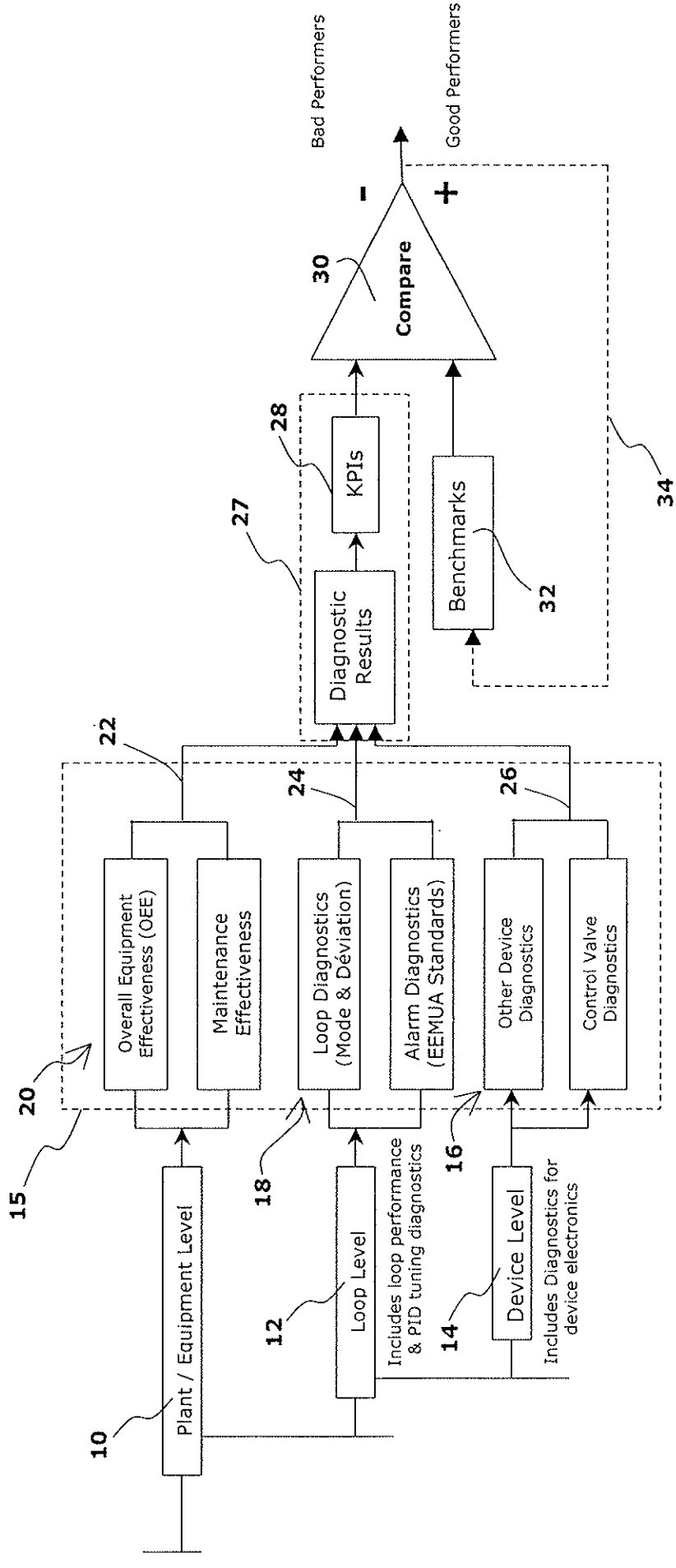

Bad Performers
Good Performers
-
+
30
Compare
28
KPIs
27
Diagnostic Results
Benchmarks
32
34
22
24
26
Overall Equipment Effectiveness (OEE)
Maintenance Effectiveness
Loop Diagnostics (Mode & Deviation)
Alarm Diagnostics (EEMUA Standards)
Other Device Diagnostics
Control Valve Diagnostics
20
15
18
16
Plant / Equipment Level
Loop Level
Device Level
12
14
Includes loop performance & PID tuning diagnostics
Includes Diagnostics for device electronics
10

FIG. 2

Management View

Available Production Time (hours)	3207	Theoretical Production Time - Turnaround Time
Turnaround Time (hours)	84.13	Duration of Turnaround
Overall Quality Factor (%)	96.10	Percentage of production conforming to quality
Machine Downtime (hours)	69.55	Sum total of all short stoppages

Overall Equipment Effectiveness

	Target	Current	Prev. Week	Remarks
Overall Availability(%) (Plant Level)	94.50	86.12	84.31	Improving
Overall Performance(%) (Plant Level)	83.00	84.13	83.10	Excellent
Overall Equipment Effectiveness(%)	83.16	69.55	64.12	Improving

Maintenance KPI

Upkeep Effectiveness(%)	98.00	73.12	72.00	Improving
Turnaround Effectiveness(%)	95.00	88.23	89.94	Deteriorating
Maintenance Effectiveness(%)	96.00	84.23	82.81	Improving

FIG. 3

Engineer's / Planner's View

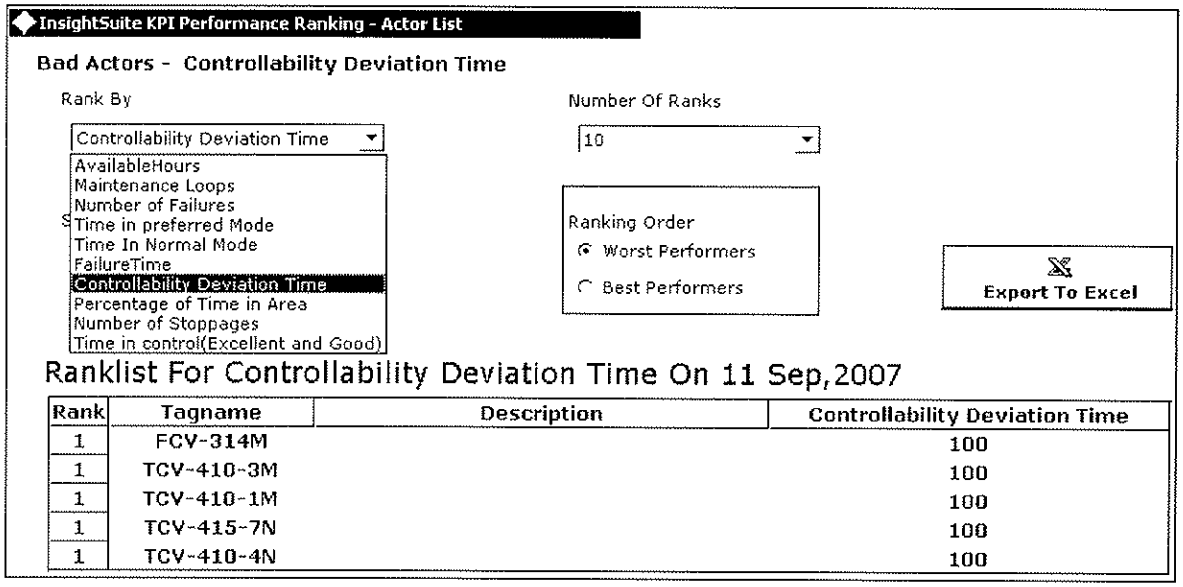


FIG. 4

Technician's / Operator's View

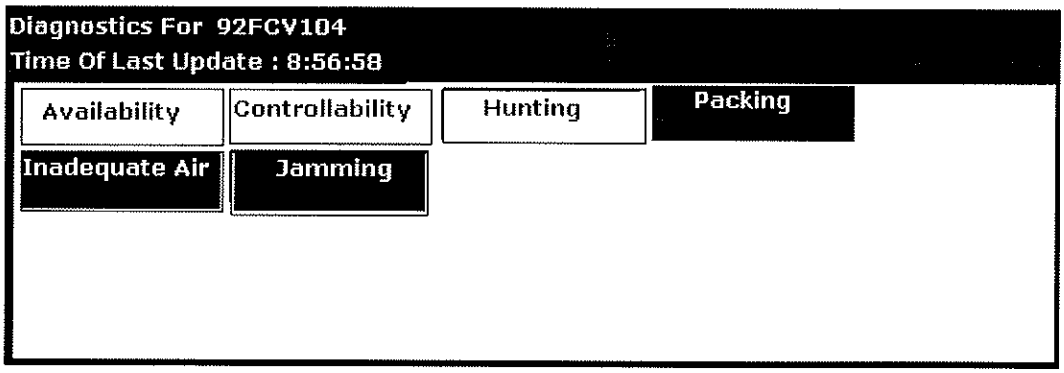


FIG. 5

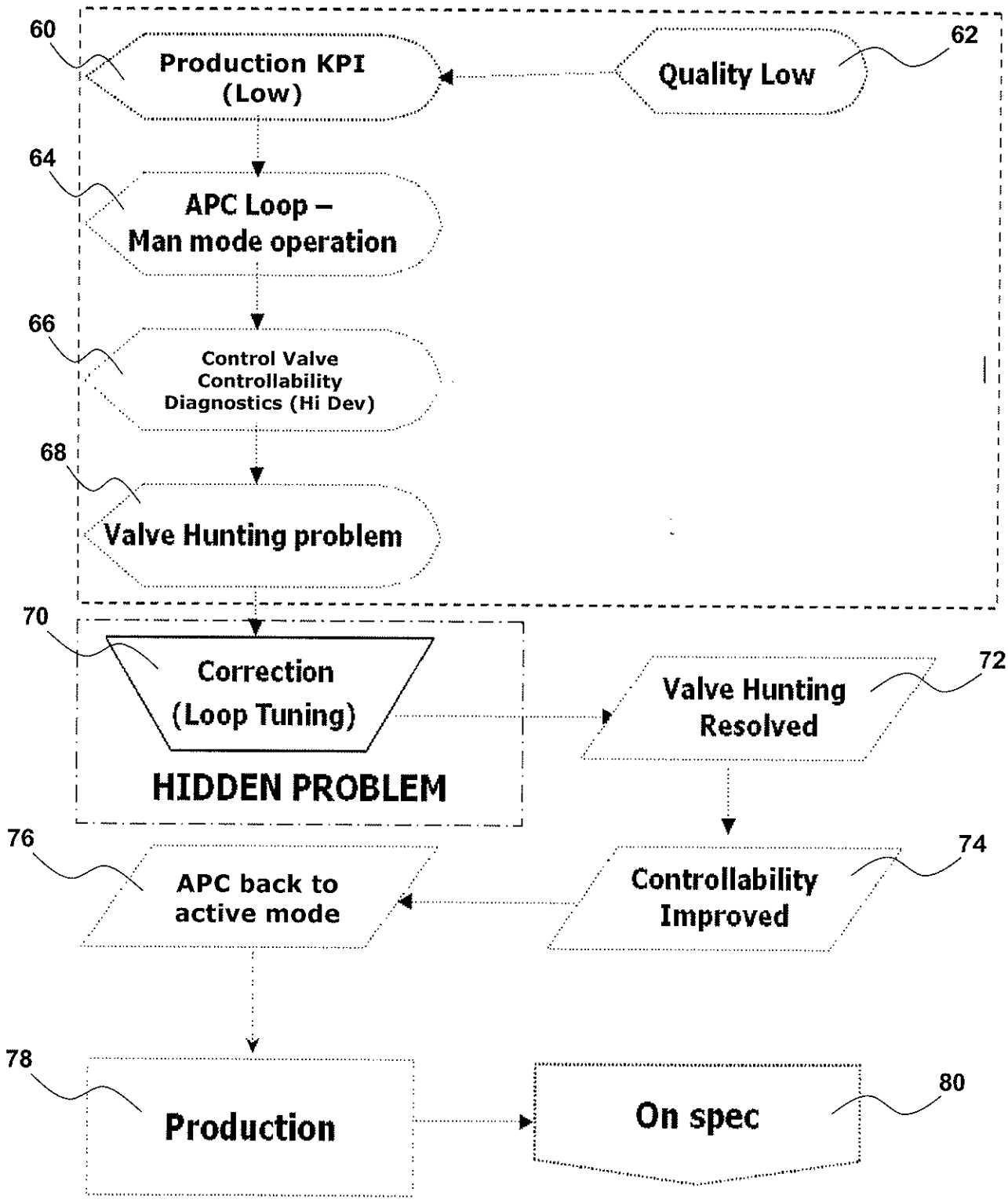

60
Production KPI (Low)
62
Quality Low
64
APC Loop – Man mode operation
66
Control Valve Controllability Diagnostics (Hi Dev)
68
Valve Hunting problem
70
Correction (Loop Tuning)
HIDDEN PROBLEM
72
Valve Hunting Resolved
74
Controllability Improved
76
APC back to active mode
78
Production
80
On spec

FIG. 6

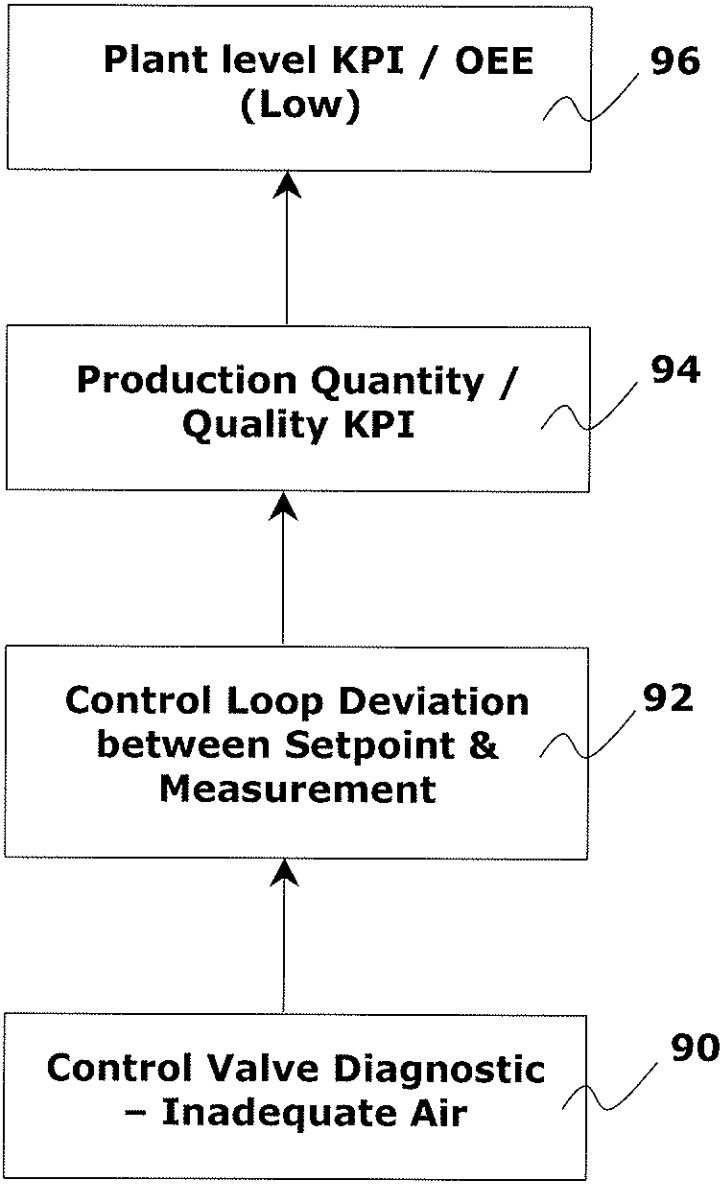

Plant level KPI / OEE (Low)
96
Production Quantity / Quality KPI
94
Control Loop Deviation between Setpoint & Measurement
92
Control Valve Diagnostic – Inadequate Air
90

FIG. 7