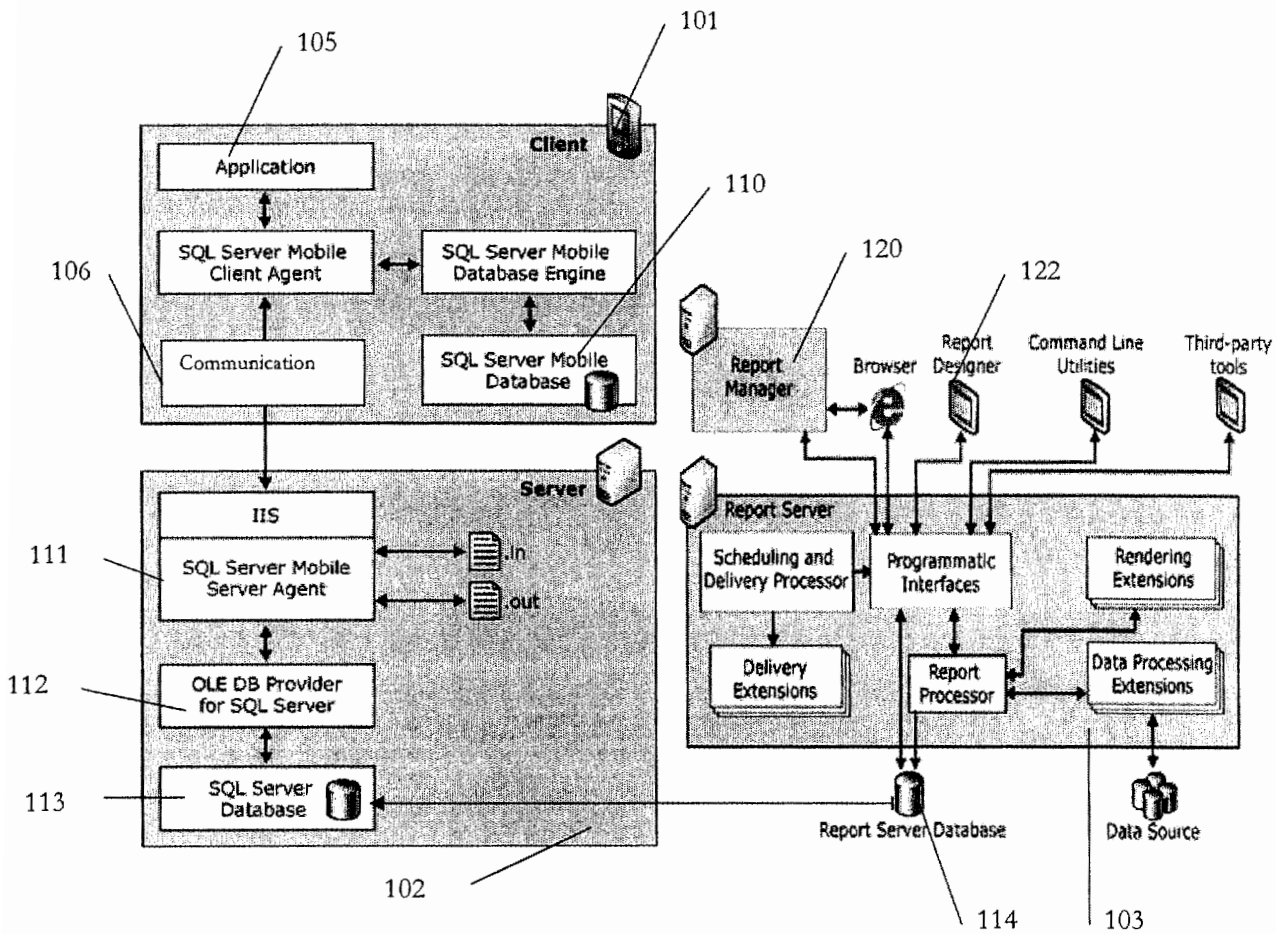

101
105
Client
Application
110
SQL Server Mobile Client Agent
SQL Server Mobile Database Engine
106
Communication
SQL Server Mobile Database
120
122
Report Manager
Browser
Report Designer
Command Line Utilities
Third-party tools
Server
IIS
111
SQL Server Mobile Server Agent
.in
.out
Report Server
Scheduling and Delivery Processor
Programmatic Interfaces
Rendering Extensions
112
OLE DB Provider for SQL Server
Delivery Extensions
Report Processor
Data Processing Extensions
113
SQL Server Database
Report Server Database
Data Source
102
114
103

Figure 1

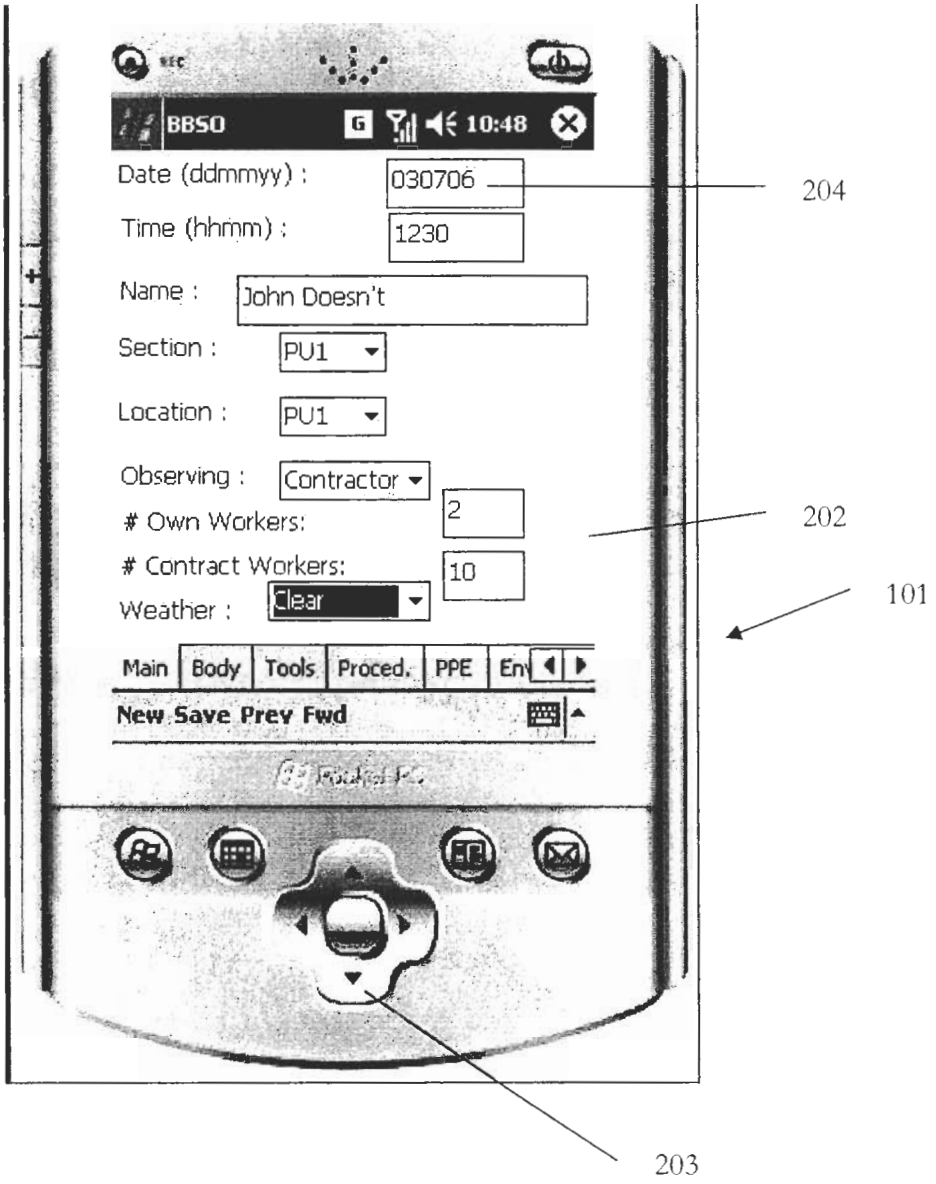

BBSO
10:48
Date (ddmmyy) :
030706
Time (hhmm) :
1230
Name :
John Doesn't
Section :
PU1
Location :
PU1
Observing :
Contractor
Own Workers:
2
Contract Workers:
10
Weather :
Clear
Main
Body
Tools
Proced.
PPE
New Save Prev Fwd
204
202
101
203

Figure 2

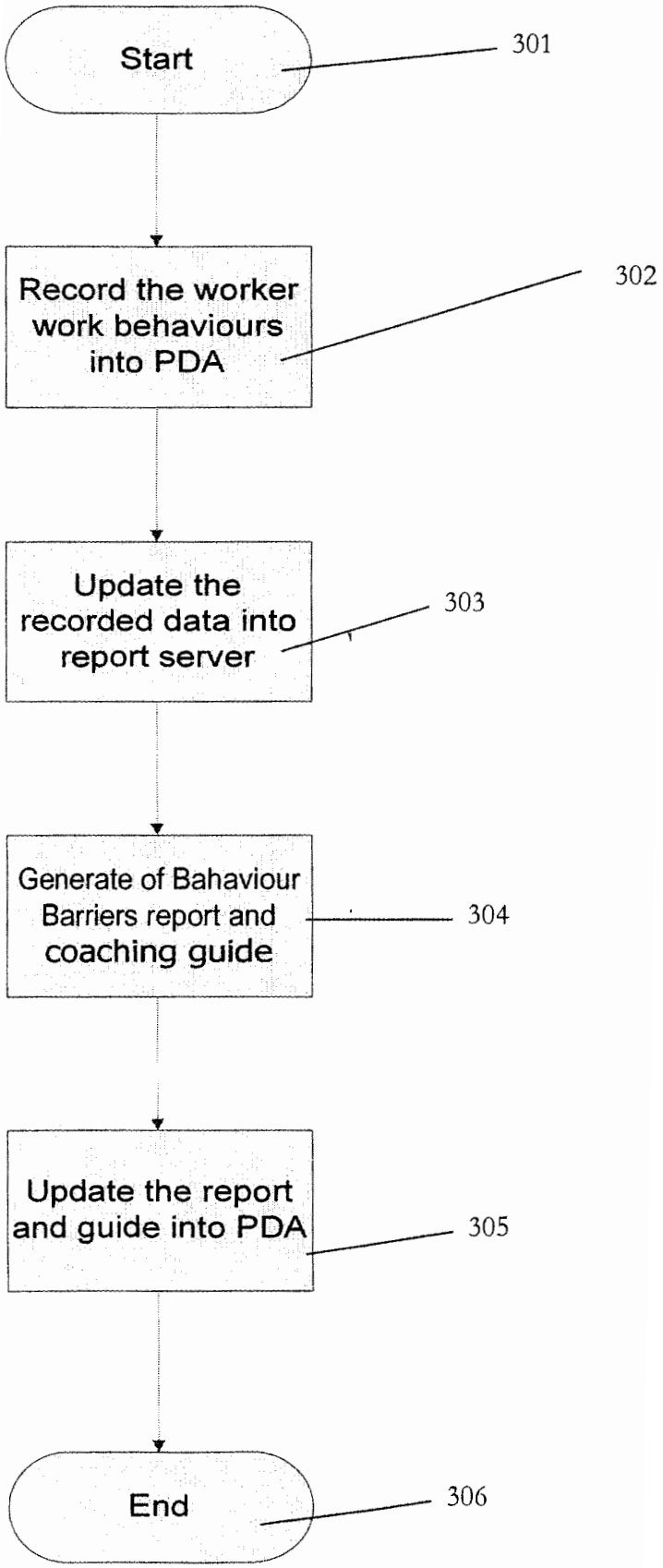

Start
301
Record the worker work behaviours into PDA
302
Update the recorded data into report server
303
Generate of Bahaviour Barriers report and coaching guide
304
Update the report and guide into PDA
305
End
306

Figure 3

ABC Company
BEHAVIOUR BASED SAFETY OBSERVATION CHECK LIST

Observer:	
Date:	
Location:	
Activity :	
Activity No:	
Contractor company	
Name of observe:	
Trade	

Figure 4

1.0 Personal Protective Equipment (PPE)			
		At risk	Safe
1.1	Head		
1.2	Face		
1.3	Eye		
1.4	Hearing		
1.5	Respiratory		
1.6	Body Protection		
1.7	Safety Belt/ Full Body Harness		
1.8	Hand & Arm		
1.9	Foot & leg		

Figure 5

2.0 Body Position			
		At risk	Safe
2.1	Body Placement		
2.2	Visibility		
2.3	Pinch Point		
2.4	Eyes on work		
2.5	Eyes on path		
2.6	Ascending/ descending		
2.7	Overextending		
2.8	Overexertion		
2.9	Line of Fire		

Figure 6

3.0 Procedures			
		At risk	Safe
3.1	Safe Procedure		
3.2	Pre-operational check		
3.3	Lock out/ Tag out		
3.4	Permit to work system		

Figure 7

4.0 Working Environment			
		At risk	Safe
4.1	Housekeeping		
4.2	Walking/ Working surfaces		
4.3	Ventilation		
4.4	Lighting		

Figure 8

5.0 Tools and Equipment			
		At risk	Safe
5.1	Selection		1
5.2	Condition		1
5.3	Use		1

Figure 9

Total		0	3
% Safe = Safe x 100/ Total			
% Safe = _____			
Note: Maximum score for each safe behaviour is 1			

Figure 10

Activity Number	
High pressure washing	1
Blasting at open space	2
Anchor chain job	3
Spray painting at open space	4
Sea grating Opening	5
Roller Painting	6

Figure 11

Barrier no	
Culture	1
Personal factor	2
Personal choice	3
Hazard recognition and response	4
Disagreement on safe work practices	5
Facility and equipment	6
Rewards/Recognition	7
Business System	8

Figure 12

Enable/Not Enable /Difficult	
Enable	**1**
Not Enable	**2**
Difficult	**3**

Figure 13

What? (Describe the activity and what At Risk Behaviour was performed)		
Why? (Why did the worker perform the At Risk Behaviour		
Item no.	What?	Barrier No.(1 to 8)
	Why?	Enable/Not/Difficult
Item no.	What?	Barrier No.(1 to 8)
	Why?	Enable/Not/Difficult
Item no.	What?	Barrier No.(1 to 8)
	Why?	Enable/Not/Difficult
Item no.	What?	Barrier No.(1 to 8)
	Why?	Enable/Not/Difficult

Figure 14

The report format will appears as follows:

Behavioral Base Safety Observation Data Summary for month of : _____

Company : _____ Dept : _____ Total workforce: _____

1. Analysis of the data collected

	At-risk behaviour	Safe behaviour	% safe behaviour
Total Number of Observation : 9	38	226	85.6%

Details of the safe and at-risk behaviour

No.	Items	Total At Risk	Total Safe	Total % of At Risk	Total % of Safe	Total no. of observation
1	**Body Position**					
1.1	Line of fire	5	4	55%	45%	9
1.2	Eyes on path or task	1	8	11%	89%	9
2	**Body use or Ergonomics**					
2.1	Lifting and lowering	6	3	67%	33%	9
2.2	Awkward body posture	2	7	23%	78%	9
2.3	Pushing or pulling	0	9	0%	100%	9
3	**Tools and Equipment**					
3.1	Selection and condition	0	7	0%	100%	7
3.2	Use	1	6	14%	86%	7
3.3	Ladders, Stairway and scaffolding	0	7	0%	100%	7
3.4	Hose Handling	0	9	0%	100%	9
4	**Procedure**					
4.1	Lock out and Tag out	0	9	0%	100%	9
4.2	Confined space entry	0	9	0%	100%	9
4.3	Hotwork	Nil	Nil	Nil	Nil	Nil
4.4	Pre-Post Job Inspection	Nil	Nil	Nil	Nil	Nil
5	**PPE**					
5.1	Head and foot protection	0	9	0%	100%	9
5.2	Eyes, face and hearing protection	0	9	0%	100%	9
5.3	Respiratory protection	0	9	0%	100%	9
5.4	Head, arm and body protection	0	7	0%	100%	7
5.5	Fall protection	0	8	0%	100%	8
6	**Environment**					
6.1	Walking/working surface	5	2	72%	28%	7
6.2	Housekeeping	1	8	11%	89%	9
6.3	Lighting	1	5	17%	83%	6
7	**Others**	0	8	0%	100%	8
7.1		0	9	0%	100%	9
7.2		6	3	67%	33%	9

Figure 15

What?	Why?	Barriers	Enable?	Non-enabled	Difficult
Didn't switch off when operator was leaving forklift	Operator wanted to talk to painting store keeper and come back immediately	3	1		
Not parking at the proper parking place	He felt as he will be going to paint store for a while only, he can park the forklift at the place.	3	1		
While turning signal light was not used	He said using inside the workshop only	3	1		
Forklift key was not taken when leaving the forklift	Need to use again	3	1		
Loose material placed on the forklift	He did not see the item	3	1		
He did not horn when the person very near to forklift	He press brake and wait for him to move away	3	1		
Chin strap with metal hook	He think it is good	3	1		

Figure 16

Analysis of the barriers is as follows:

S/No	Barriers	At risk	Enable	Non-enable	Difficult
1	Culture	12	0	4	8
2	Personal factor	10	10	0	0
3	Personal choice	5	5	0	0
4	Hazard recognition & response	4	0	4	0
5	Disagreement on safe practices	2	2	0	0
6	Facility & equipment	4	1	3	0
7	Rewards/ recognition	0	Nil	Nil	Nil
8	Business system	0	Nil	Nil	Nil

Figure 17

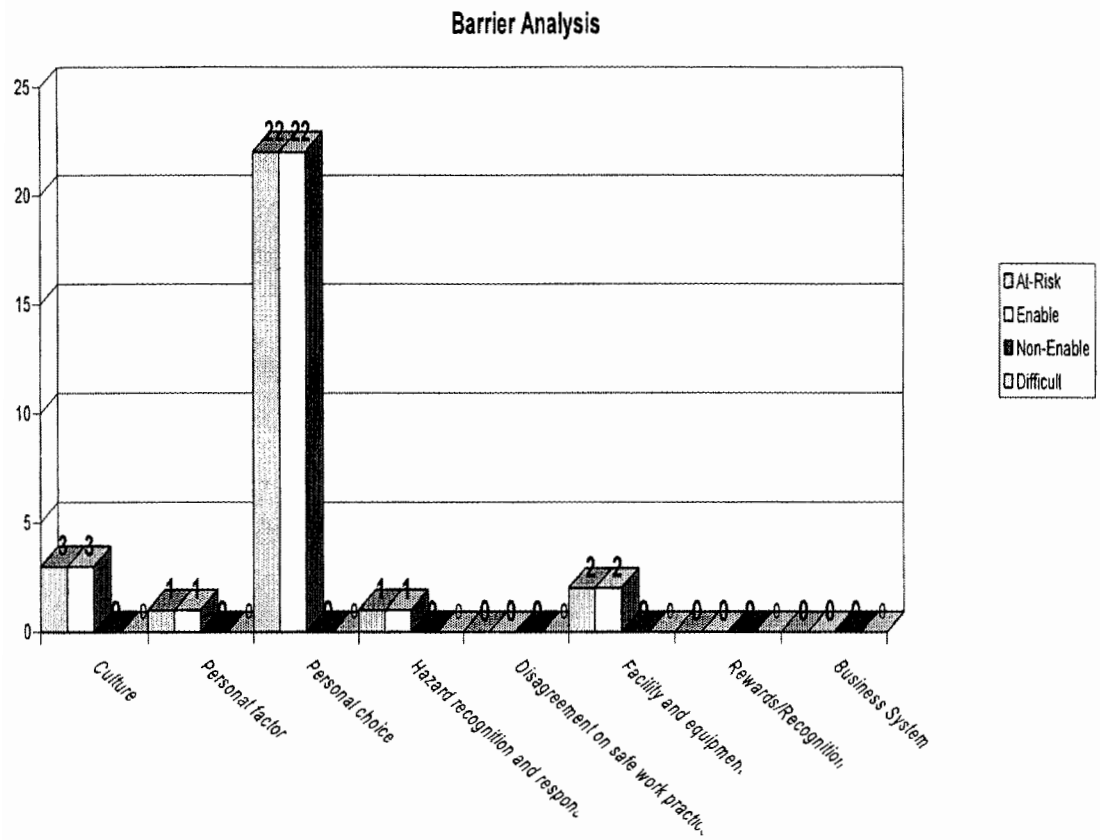

Barrier Analysis
25
20
15
10
5
0
At-Risk
Enable
Non-Enable
Difficult
Culture
Personal factor
Personal choice
Hazard recognition and respon
Disagreement on safe work practi
Facility and equipmen
Rewards/Recognition
Business System

Figure 18