

# Automatic Supervisor and Control System

idaco



## ASC System Description:

ASC system applies method for monitoring in a real-time manner the efficiency and/or internal quality level of a company down to the level of individual tasks, the system comprises:

- Apply automatic supervisor concept as if the organization has hired an industrial engineer for each production and quality worker.
- Give organization management full control on all workers and employees.
- Apply new concept for monitoring the efficiency & PPM of an organization and down to the level of Departments, Groups and Workers.
- Build communication system between all workers and their managers.
- Give each worker Real time feedbacks of salary, efficiency, PPM ,error counter, revised counter, operation standard time and other needed parameters.

- Generate some useful statistics which guide the management to take correct decisions like statistics about stoppages or operations errors.
- Motivate employees by bonuses relative to increased efficiency.
- Generate an atmosphere of competition between the workers
- Help the worker to fine tune his performance by giving him a second by second feedback about his performance level.
- Differentiate between active and less active workers giving a sense of justice.
- Increasing the performance level of the utility departments.
- Maximize the team work spirit.

# ASC System Block Diagram:

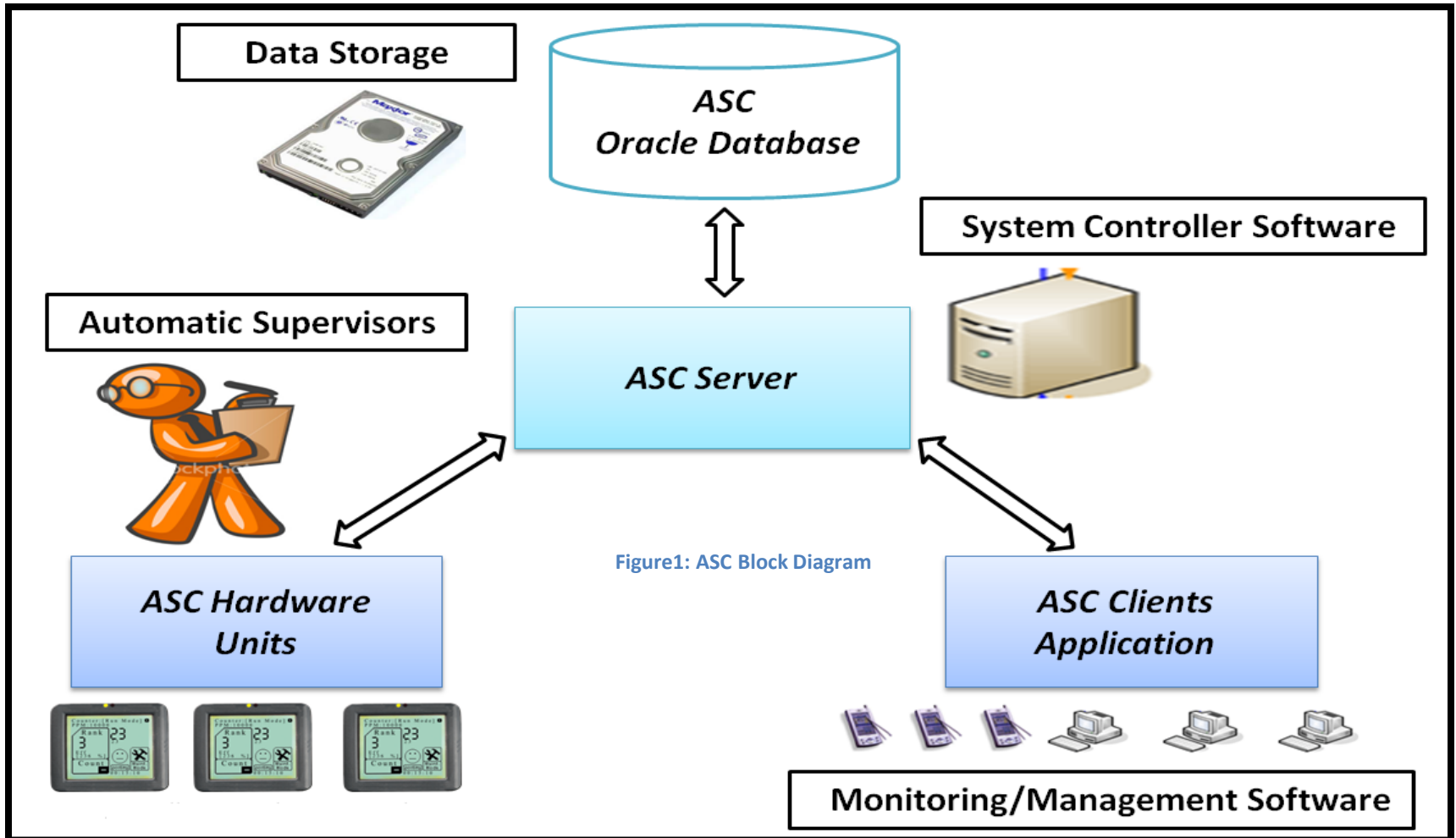


Figure1: ASC Block Diagram

## ASC Hardware Unit:

ASC hardware unit works as an automatic supervisor for each worker.

✓ This Unit Supports the following pages for the worker:

- Log in & off page.
- Run & Posting page for production worker,As shown in figure 3
- Quality page for quality worker,As shown in figure 4
- Graph page.
- Settings page.
- Control page.
- Mail page.
- SMS page.
- Stoppage page.
- Learn page.

✓ The unit supports the Barcode connection to insert data automatically or increment counter automatically ,by scanning the completed operation.

✓ The unit displays real time feedbacks for the worker in run mode like:

- Current Efficiency.
- Accumulation Efficiency.
- Quality revised counter.
- Error Counter.
- PPM.
- Bonus Salary.
- Led Indicator (red or green).
- Posted Counter.
- Worker Rank.
- Count down timer. (Count down then Count Up).
- Alarm for (SMS, Posting error Or High PPM).

✓ The unit can control connected devices to turn it on or off automatically by applying schedule or at specific parameter threshold.



Figure2: ASC Hardware Unit Control Application

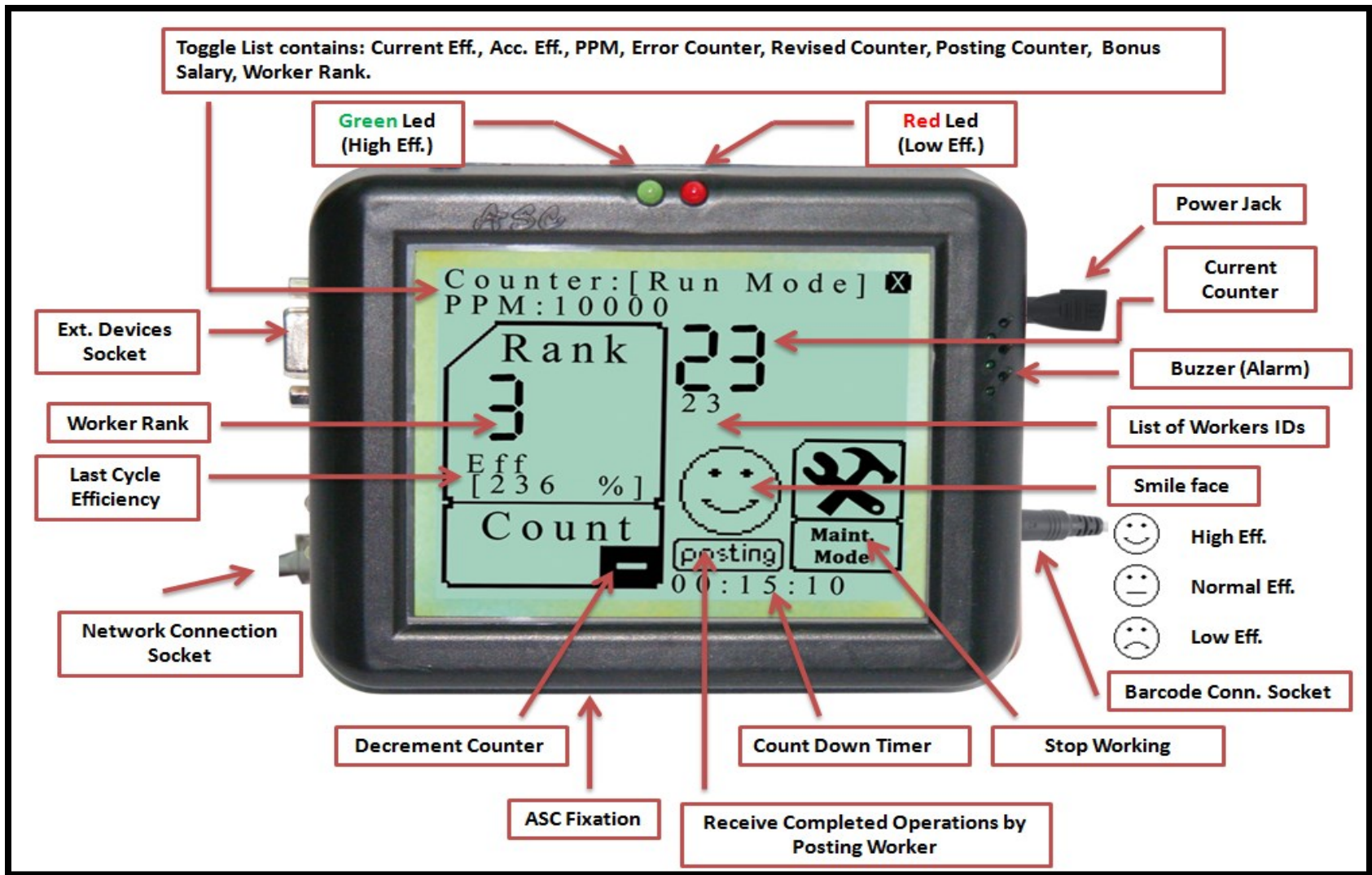


Figure3: ASC Hardware Unit Production Worker



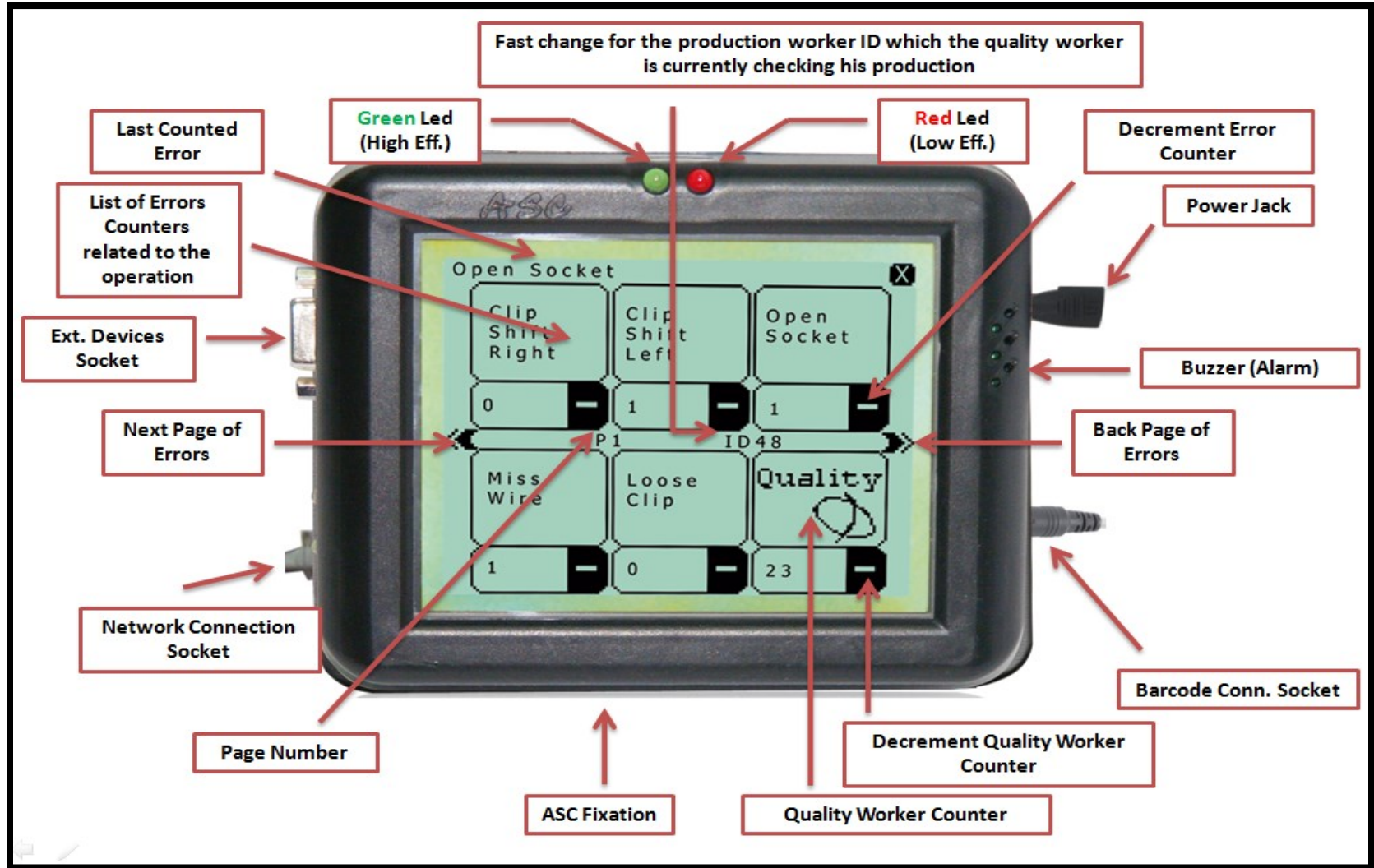


Figure4: ASC Hardware Unit Quality Worker

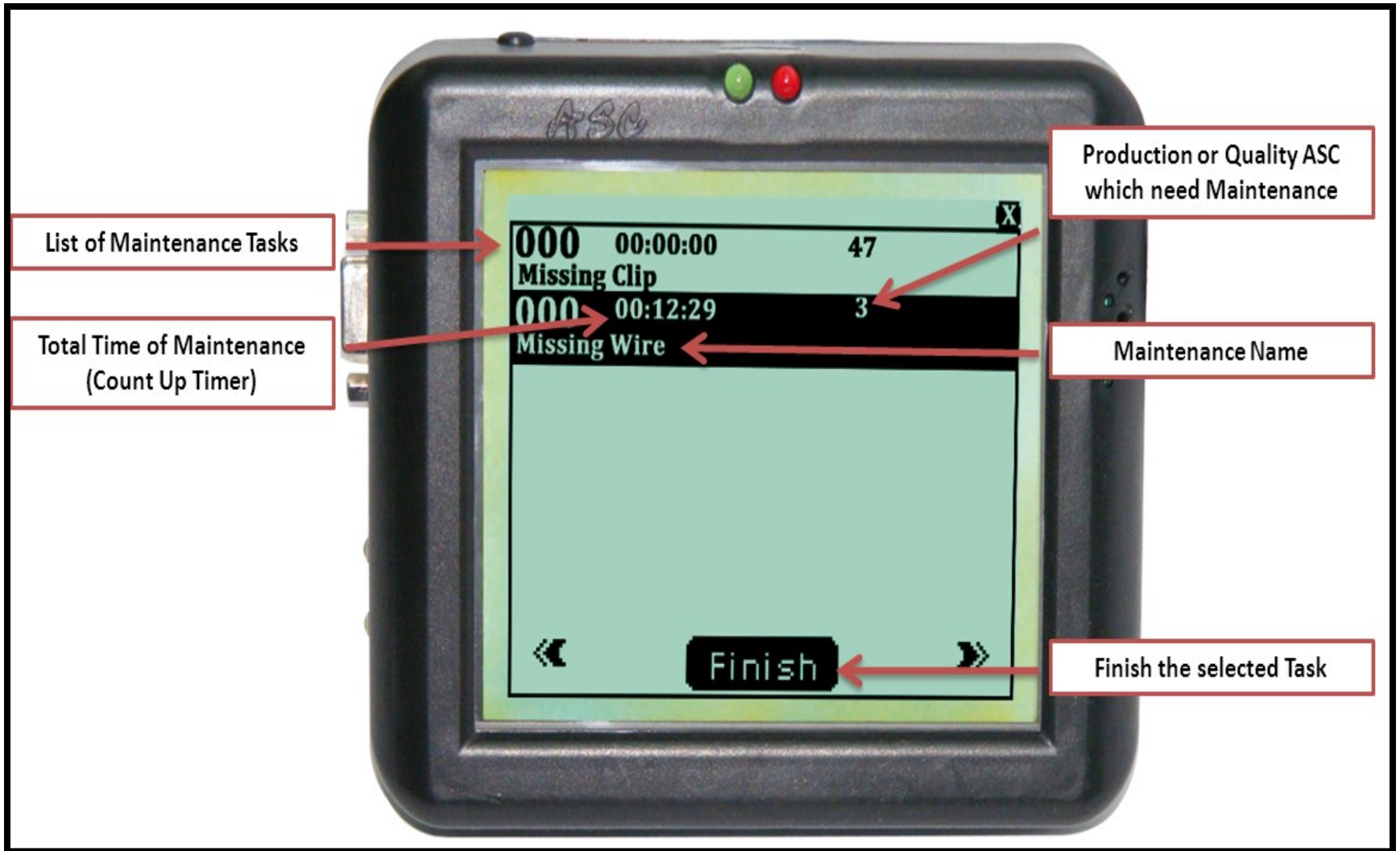


Figure5: ASC Hardware Unit Maintenance Worker

## ASC Client Application:

The software application runs on different points in the organization or factory which enables supervisors and managers to monitor the workers, groups, departments and organization in a real time mode according to the privilege of the user:

- ✓ The user logs in through specific user name and password.
- ✓ The application detects the privilege of the user and constructs a tree of members which the user has the privilege to monitor.
  - Administrator or organization manager.
  - Department manager.
  - Group manager.

✓ The application displays the following parameters for the selected node from the tree:

- Current efficiency and accumulation efficiency.
- Accumulation efficiency for a period.
- Current PPM.
- Accumulation PPM for a period.
- Operation counter.
- Error counter / Revised counter.
- Current operation information or current stoppage information.
- Total working stoppages by the worker.
- Worker rank.
- Selected node information (ID and Name).
- Image indicates to the status of the selected node:
  - Not connected.
  - High efficiency.
  - Low efficiency.
  - Under stoppage.



- ✓ The user can get the details of each cycle applied by the selected worker from the tree by clicking on the accumulated efficiency value.
  - Then the user can detect specific period to get the details of all operations applied by this worker in this period.
  - The user can export these details in excel report.
  - The user can refresh the calculation with new start time or/and new operation in specific period.
  
- ✓ The user can get the worker details day by day to make analysis for the accumulated efficiency for a period and export this data into excel report.
  
- ✓ The user can get the posting details for a period for specific worker, and detect the occurred error in addition to export this data in excel report.

- ✓ The user can get all stoppages details, applied by the selected worker, by clicking on the work stoppage value.
  - Then the user can detect specific period to get the details of all stoppages applied by specific worker in a specific period.
  - The user can export this details into excel report.
- ✓ The user can get all errors details counted on the selected worker by clicking on the current PPM value.
  - Then the user can detect specific period to get the details of all errors applied by specific worker.
  - The user can export this details into excel report.
- ✓ The user can get the location of specific worker in the factory layout by double click on the worker in the tree. The user can return to the tree by clicking on the worker location in the layout to display location of all workers in group, department or the whole organization.

✓ The user can generate graph for specific worker describes the details of each cycle during the day or generate graph for a specific period.

- The graph supports zoom in and zoom out property.
- The graph supports copy the graph or generate image to the graph.

✓ The user can generate efficiency graph for group or department or all organization for a specific period.

✓ The user can generate excel report about specific entities which defined in the system like:

- Defined Operations Details.
- Defined Stoppages Details.
- Defined Errors Details.
- Defined Breaks Details.
- Defined Shifts Details.
- All Workers data in organization or department or group.

- ✓ The user can generate efficiency / PPM or stoppages reports in specific period for specific entity, organization, department, group or worker.
- ✓ The user can search on specific worker, group or department by ID or by Name.
- ✓ The user can control the tree by select specific loading setting through loading options which support:
  - Connected Workers.
  - All Workers.
  - Workers in specific shift.
  - Workers in specific group.
  - Workers in specific department.
- ✓ The user can enable or disable specific monitoring parameter from Monitoring settings options.



✓ The system administrator can :

- Add new operation and learn it to detect the standard time of this operation.
- Detect the running mode (Individual Mode or Team Mode).
- Add new error, new shift, new break, new stoppage, new worker, new group, new department, and new organization in addition to edit any existing item.
- Learn factory layout to detect the location of each ASC hardware unit
- Detect specific thresholds used by the system to control the real time indicator and calculations like:
  - Current efficiency threshold.
  - Accumulation efficiency threshold.
  - Accumulation efficiency over period threshold.
  - Current PPM threshold.
  - Accumulation PPM threshold.
  - ASC Hardware Unit Led (on current or accumulated Efficiency).
  - Win Win Parameters & Bonus Salary Unit.
  - Shift Flexibility Time.

Add Edit Show Search On Help Generate Learn

All Accessible Items

Worker Rank: **1**

Selected Item Information  
Efficiency of Worker Name: عمرو سيد شعبان يوسف على with ID: 18

Close  
Log off

Mon / Load Op  
 Err/Rev  
 Curr Eff  
 AccEff O.P  
 Op\_Info  
 Acc Eff  
 Op\_Count  
 Curr PPM  
 AccPPM O.P  
 All  
 Conn  
 Shift  
 Group  
 Dept

IDACO  
 Testing  
 Production  
 Demo  
 VW  
 عبد الله محمد محمود الحشاش  
 محمود سيد رمضان السيد  
 عمرو سيد شعبان يوسف على  
 تامر رمضان على رمضان  
 عزة الدرملني السيد على  
 علام عبد القوي ابراهيم جاد  
 محمد سيد محمد حسن  
 Quality  
 General Quality  
 VW Quality  
 Quality Test  
 محمد فاروق  
 Management  
 Management Group1

Current  
 Current Efficiency: **105.64** Last cycle  
 Current PPM: **90909.1**

Accumulative  
 Accumulative Efficiency: **114.96** Click here to get cycles details  
 Accumulative Efficiency Over Period: **113.5** Click here to get analysis over period  
 Accumulative PPM Over Period: **0.0** Click here to get stopp. over period

Count  
 Operation Count: **33** Click here to get PPM analysis  
 Click here to get Acc. PPM analysis  
 Working Stoppage  
 Total Stoppage: 1:22:39  
 Period  
 From: 01 يوليو 2011 02:39  
 To: 04 يوليو 2011 02:39  
 Analysis period

Operation / Stoppage Info  
 OP\_ID: 6  
 OP\_NAME: PL35C  
 OP\_Std\_Time: 0:13:56 / 1 W  
 OP\_Act\_Time: 0:13:11

Error Count / Revision Count: **3/33** Click here to get errors analysis

Figure6: ASC Client Application Worker Details

Add Edit Show Search On Help Generate Learn

**All Accessible Items**

- IDACO
  - Testing
  - Production
    - Demo
      - VW**
        - الله محمد محمود الحشاش
        - محمود سيد رمضان السيد
        - و سيد شعبان يوسف على
        - تامر رمضان على رمضان
        - عزة الدرملى السيد على
        - لام عبد القوي ابراهيم جاد
        - محمد سيد محمد حسن
  - Quality
    - General Quality
    - VW Quality
      - Quality Test
        - محمد فاروق
  - Management
    - Management Group1

Worker Rank

### Selected Item Information

Efficiency of Group Name: VW with ID: 1

#### Current

Current Efficiency:

**80.88**

Current PPM:

**37974.68**

#### Count

Operation Count:

**225**

Error Count / Revision Count:

**4/79**

#### Accumulative

Accumulative Efficiency:

**90.83**

Accumulative Efficiency Over Period:

**75.79**

Accumulative PPM Over Period:

**113636.4**

Working Stoppage

Period

From: 03 يوليو 2011 02:49

To: 04 يوليو 2011 02:49

#### Operation / Stoppage Info

Close

Log off



Mon / Load Op

Err/Rev

Curr Eff

AccEff O P

Op\_Info

Acc Eff

Op\_Count

Curr PPM

AccPPM O P

All

Com

Shift

Group

Dept

Figure7: ASC Client Application Group Details

WORKER_ID	WORKER_NAME	OP_ID	OP_NAME	OP_STD_TIME	OP_COUNTER	START_TIME
2	عبد الله محمد محمود الحشاش	9	PL37B	0:17:2	1	04/07/2011 08:30:00
2	عبد الله محمد محمود الحشاش	9	PL37B	0:17:2	2	04/07/2011 08:30:00
2	عبد الله محمد محمود الحشاش	9	PL37B	0:17:2	3	04/07/2011 08:30:00
2	عبد الله محمد محمود الحشاش	9	PL37B	0:17:2	4	04/07/2011 08:30:00
2	عبد الله محمد محمود الحشاش	9	PL37B	0:17:2	5	04/07/2011 08:30:00
2	عبد الله محمد محمود الحشاش	9	PL37B	0:17:2	6	04/07/2011 08:30:00
2	عبد الله محمد محمود الحشاش	9	PL37B	0:17:2	7	04/07/2011 08:30:00
2	عبد الله محمد محمود الحشاش	9	PL37B	0:17:2	8	04/07/2011 08:30:00
2	عبد الله محمد محمود الحشاش	9	PL37B	0:17:2	9	04/07/2011 08:30:00
2	عبد الله محمد محمود الحشاش	9	PL37B	0:17:2	10	04/07/2011 08:30:00
2	عبد الله محمد محمود الحشاش	9	PL37B	0:17:2	11	04/07/2011 08:30:00

Start Working @ : 04/07/2011 08:30:00 م

**Refresh\_Start\_Time**  
 New Start Time: 04 يوليو 2011 02:57:03 AM  
 OP\_ID: [ ] OP\_Name: [ ]  
 Start Time: 04 يوليو 2011 02:57:03 AM  
 End Time: 04 يوليو 2011 02:57:03 AM

**Period**  
 From: 04 يوليو 2011 02:57  
 To: 04 يوليو 2011 02:57

Export To Report Load Cancel

Figure8: ASC Client Application Worker Cycles Details

	OP_ID	OP_NAME	OP_STD_TIME	OP_COUNTER	START_TIME	END_TIME	TOTAL_WORKING_TIME
▶ عمرو سيد ش	6	PL35C	0:13:56	37	29/06/2011 08:30:00 ص	29/06/2011 05:00:00 م	08:30:00
عمرو سيد ش	6	PL35C	0:13:56	37	30/06/2011 08:30:00 ص	30/06/2011 05:00:00 م	08:30:00
عمرو سيد ش	6	PL35C	0:13:56	38	03/07/2011 08:30:00 ص	03/07/2011 05:00:00 م	08:30:00
*							

Export To Report      Posting Details      Cancel

Figure9: ASC Client Application Worker Details Over Period

WORKER_ID	WORKER_NAME	OP_ID	OP_NAME	STOP_ID	STOP_NAME
2	عبد الله محمد محمود الحشاش	9	PL37B	1	Rest
2	عبد الله محمد محمود الحشاش	9	PL37B	1	Rest
2	عبد الله محمد محمود الحشاش	9	PL37B	1	Rest
2	عبد الله محمد محمود الحشاش	9	PL37B	1	Rest
2	عبد الله محمد محمود الحشاش	9	PL37B	1	Rest
2	عبد الله محمد محمود الحشاش	9	PL37B	1	Rest
2	عبد الله محمد محمود الحشاش	9	PL37B	1	Rest
*					

**Stoppages\_Over\_Period**  
 From: 29 يونيو 2011 02:57  
 To: 04 يوليو 2011 02:57

Figure10: ASC Client Application Worker Stoppages Details

OP_COUNTER	ERROR_ID	ERROR_NAME	ERROR_WEIGHT
6	4	السوكيت به تشوهات - كسر	0.4
6	12	اللوك الثانوي - هولدر - شوكة - كعب ( للسوكيت مفتوح)	0.1
6	13	السلك به قطع او تشوهات	2
6	14	حدوث شد فى سلك او اكثر داخل السوكيت	1.8
6	15	غير منتظم - (entangled wire) السلك معقد	0.7
6	16	اتجاه المخرج غير مطابق	1.8
6	17	(ابعاد أطوال) المخرج غير مطابقة (أطول)	0.7
6	18	(ابعاد أطوال) المخرج غير مطابقة (أقصر)	1.8
6	23	(الجرومييت) (به تشوهات - قطع)	1.2
6	24	(الجرومييت) تم تركيبه باتجاه معكوس (مقلوب)	0.3
*			

PPM Time: 11202.4 # of Losses Operations: 13

ExportToReport Cancel

Figure11: ASC Client Application Worker Errors Details

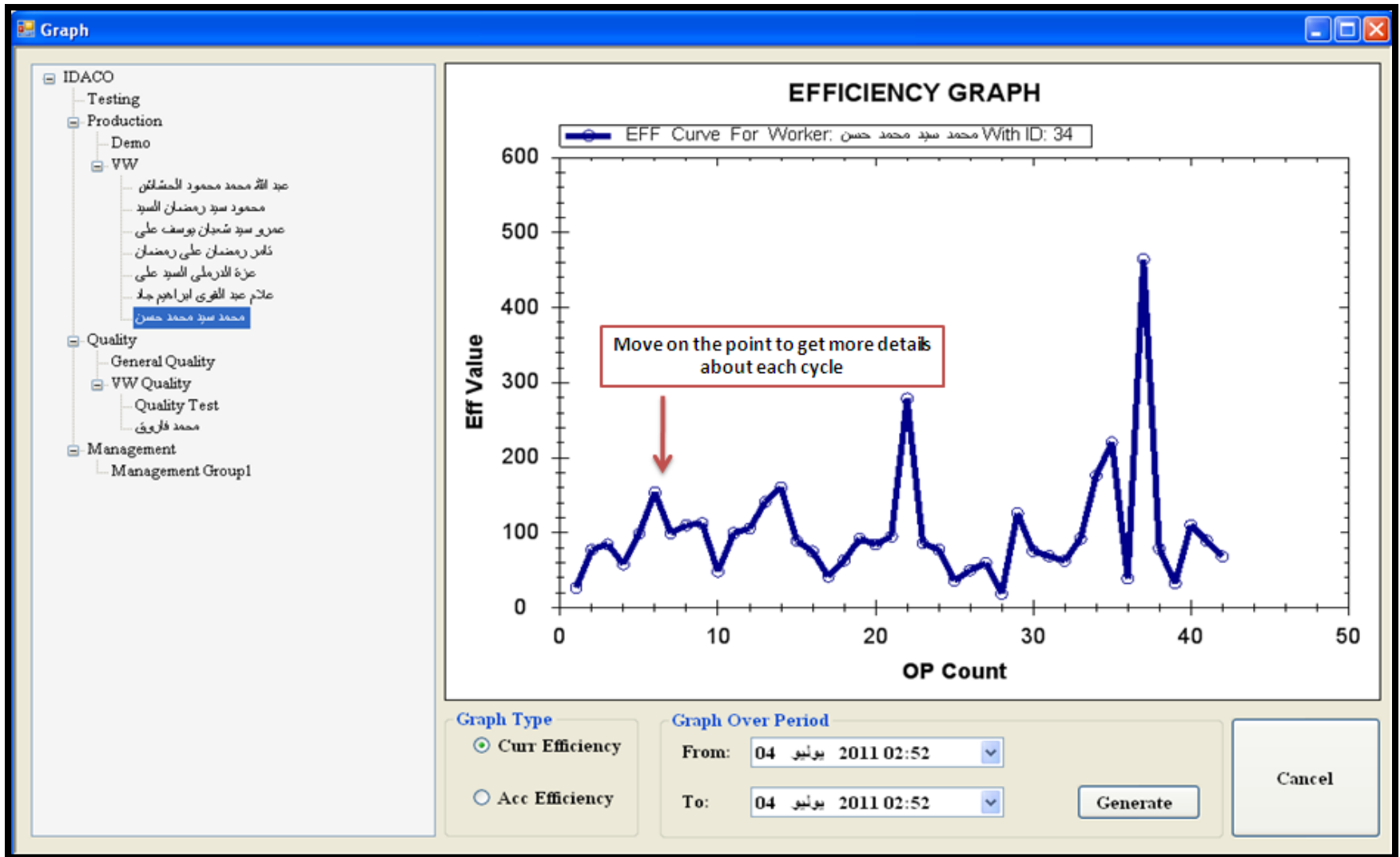


Figure12: ASC Client Application Worker Graph



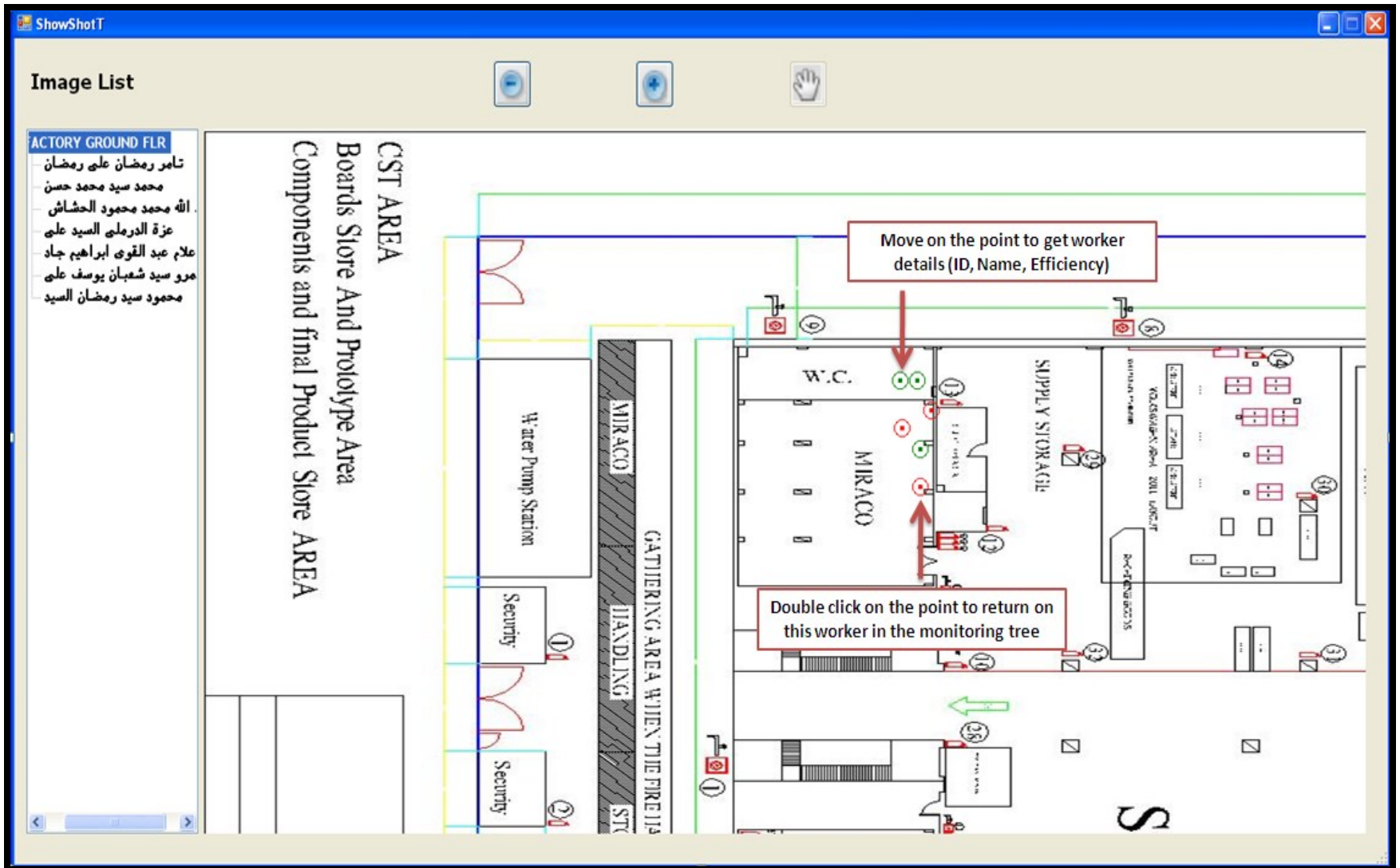


Figure13: ASC Client Application Workers Location Monitoring

## ASC Hardware Unit Technical Specification:

- ✓ ASC Dimensions: ASC Hardware Unit dimensions described in the following figure:

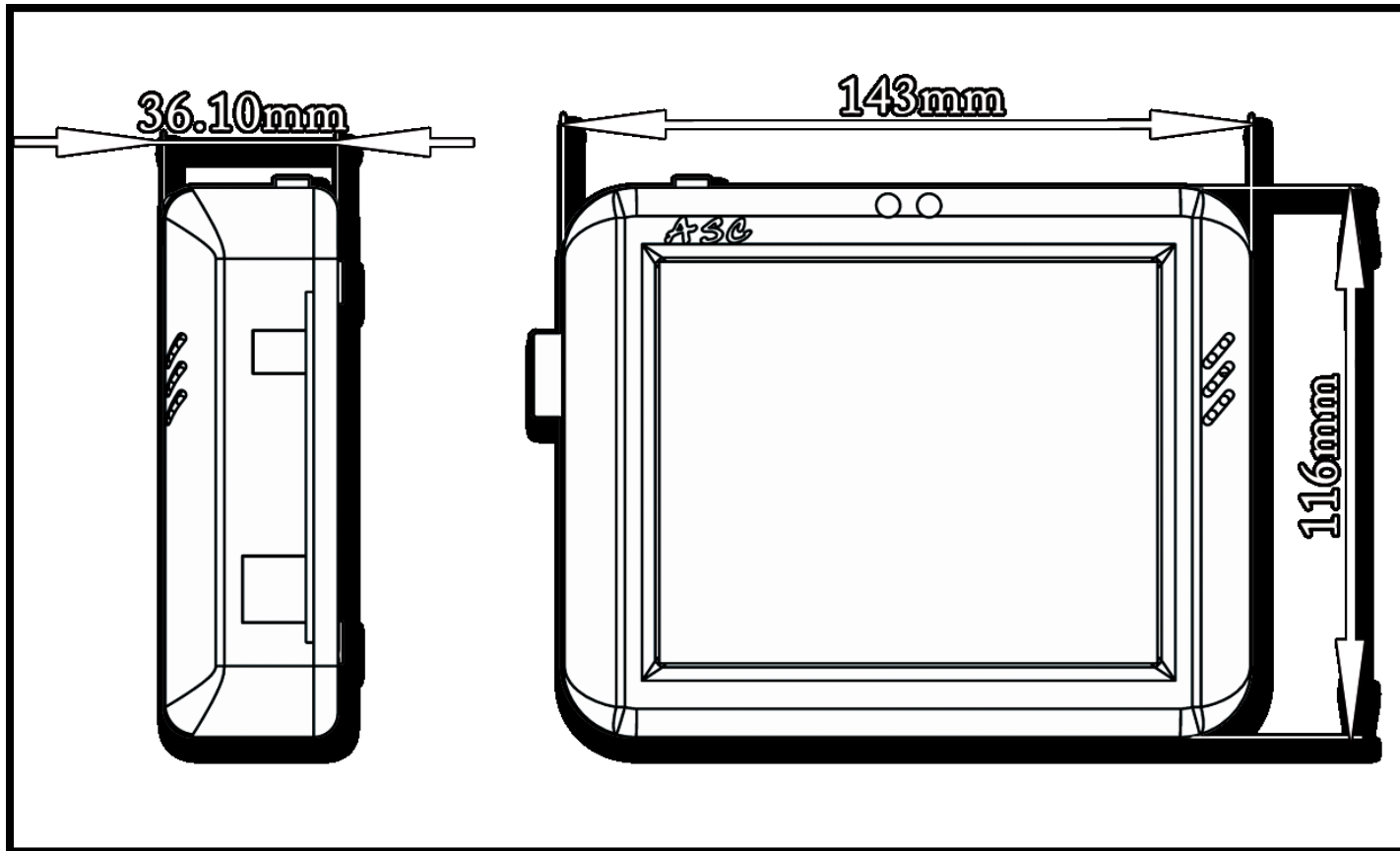


Figure14: ASC Hardware Unit Dimensions

✓ ASC Dimensions:

- 4.7 " LCD.
- Resisting touch screen.
- 9 Volt power supply.
- Barcode connection.
- External devices socket.
- Network connection socket.
- Buzzer and two LEDS.

## ASC System Installation Requirements:

1. Just adapter and network point for each hardware unit in the system.
2. Install ASC Server and ASC oracle database on Administrator PC.
  - ✓ Operating System: Windows XP/Vista/Seven.
  - ✓ Installation Requirements: Oracle Installation Products.
3. Install ASC Monitoring Client on Any PC in the organization
  - ✓ Operating System: Windows XP/Vista/Seven.
  - ✓ Installation Requirements: Oracle Client Product.

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