



BECON cloud

HVAC Total Management System



About us

Expert company in service & maintenance for HVAC solution and healthcare electronics

Global No.1
Service & maintenance expert
in total HVAC system and healthcare
electronics

LG Electronics HVAC & Healthcare
Hi-M.Solutek

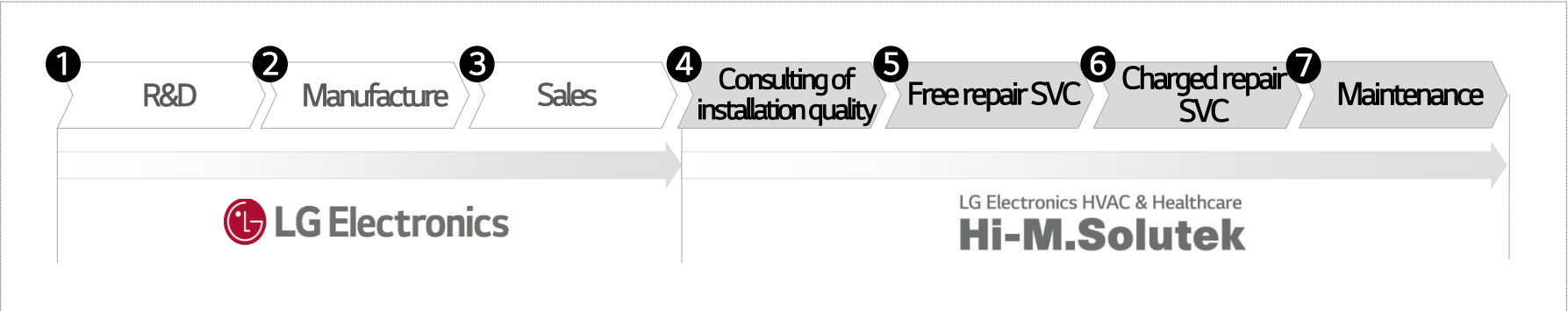


- Hi-M.Solutek
- Foundation: January 3, 2006
- 104.4 billion KRW sales in 2014
- 1,681 professionals in HVAC and healthcare SVC & maintenance

	Employees	Note
HVAC	451	<u>371 Engineers</u>
Healthcare	1,190	
Total	1,681	

as of May 2015

We take care of the final stage of System Air Conditioner business value chain



BECON
Cloud

FMS
Facility Maintenance

RCS
Remote Control

EMS
Energy Management

Customer
Value

BECON Cloud provides HVAC-specialized solution through an entire life cycle of LG CAC



BMS in general

Manages various facilities & systems of different brands in building



BECON Cloud

Specializes in total care of LG HVAC from the maintenance to energy solution



Multi V



SCAC



Ventilation



AHU



Chiller

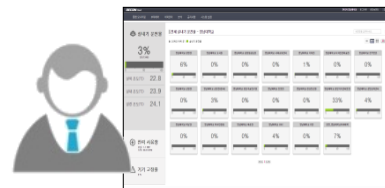


Lighting





Hi-M.Solutek



Customer

External network



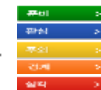
Weather info.



Cloud server



Energy Meter



Energy agencies



Big data analysis
server



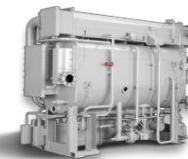
and what else?

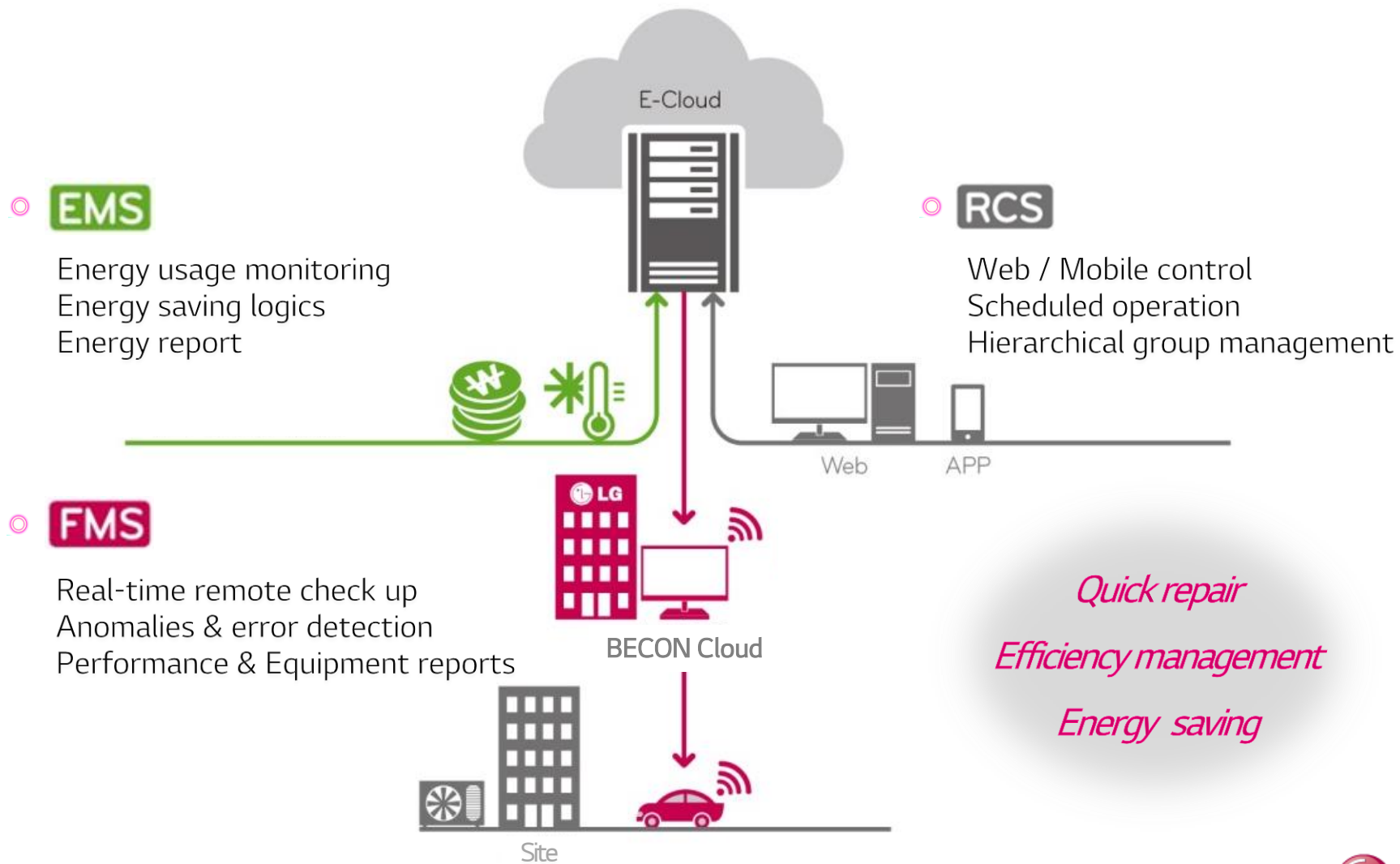
Gate way



Central Controller

Internal network





BECON
Solution

FMS
Facility Maintenance

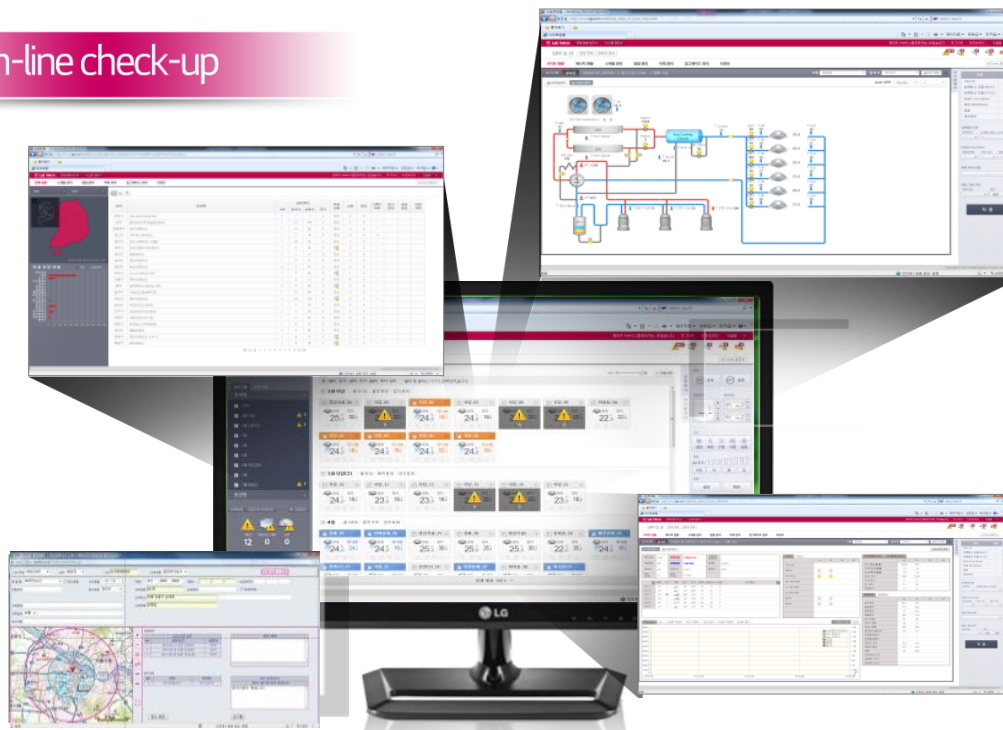
RCS
Remote Control

EMS
Energy Management

Customer
Value

Real-time on-line prevents breakdown

On-line check-up



- ◆ Anomalies and errors
- ◆ Cycle
- ◆ Network connection
- ◆ Operation history & pattern



Maintenance
Cost



Quick Repair



Reports



Product Life
Management

Improved work efficiency in building management

Facility management in general

FMS of BECON Cloud



Maintenance
Cost



Quick Repair



Reports



Product Life
Management



Disaster

Building

Sewage

Security

Electricity

Facility

HVAC facility maintenance

- Malfunction detection
- Before service
- Periodical reports
- Remote control

- No need of residential personnel
- Simplify HVAC management

*Improve work efficiency
Reduce work resources*



Maintenance
Cost



Quick Repair

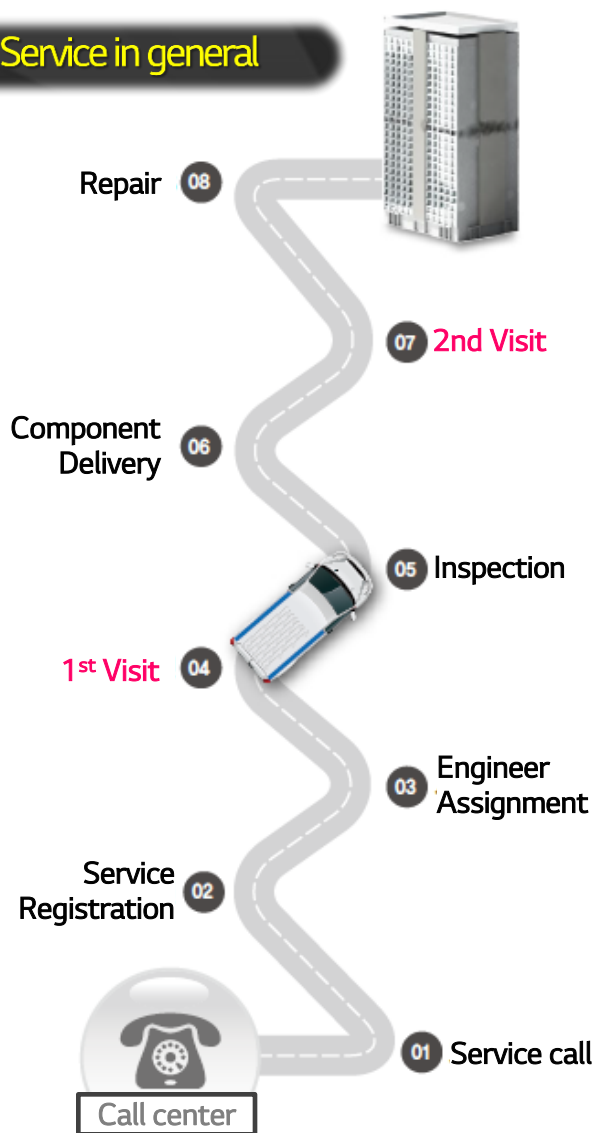


Reports

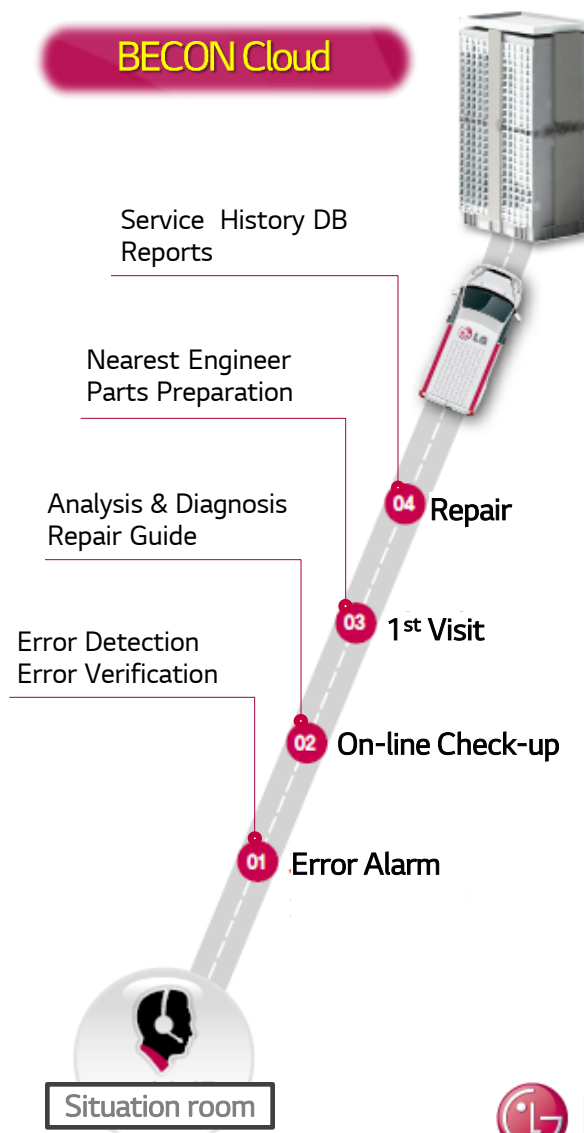


Product Life
Management

Service in general



BECON Cloud





Maintenance
Cost



Quick Repair



Reports



Product Life
Management

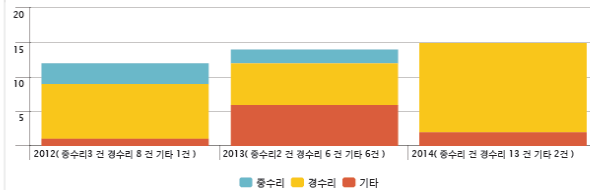
Customized solution based on data analysis

Half-yearly reports : Equipment report, Performance report

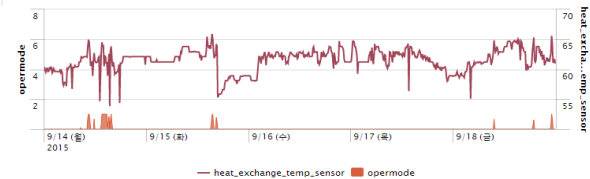
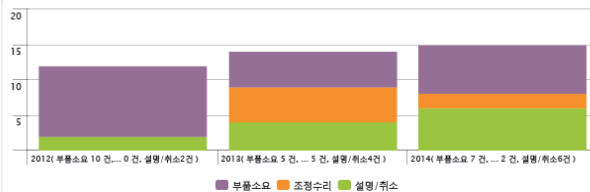
1. 수리 이력

2012년부터 지금까지 연도별 수리 서비스 진행된 내역입니다

연도별 수리 건수



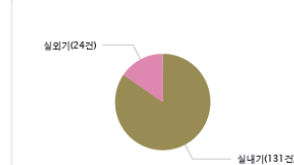
처리 유형별 수리건수



2. 이상징후

현재 에어컨이 고장난 것은 아니지만, 주요 센서값으로 판단했을 때, 잠재적으로 고장을 일으킬 수 있는 내역입니다.

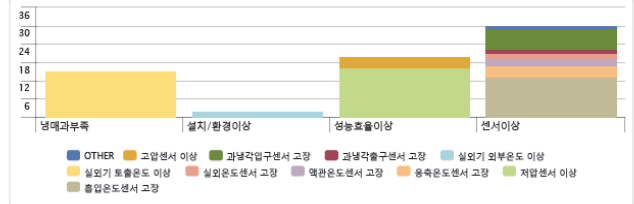
전체 점검 필요 기기 현황



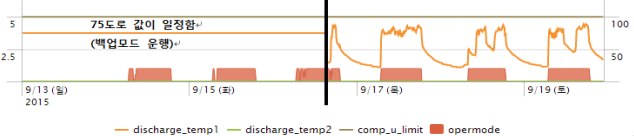
전체 설치 대비 점검 비율

기기 분류	설치 기기 수(A)	점검 필요 기기 수(B)	설치 대비 점검 필요 기기 비율(B/A)	점검 필요 항목 수(C)	이상 기기 당 점검 항목 수(C/B)
실외기	23	21	0.913043	61	2.904762
실내기	122	131	1.073770	131	1

실외기 이상 징후 요약



교체전





Maintenance
Cost



Quick Repair



Reports



Product Life
Management

*Systematic management **extends durability***



◆ Site-customized solution

- Client's DB based solutions such as analysis of usage patterns & site features



◆ Malfunction detection

- Monitoring by qualified engineers
- Prevent damages on core parts



◆ Online pre-inspection

- Errors and malfunction monitoring on a daily basis



◆ Timely notice for cleaning

- Provide cleaning notice based on operation hours and performance data

- 
- Product lifespan
 - Performance
 - Efficiency

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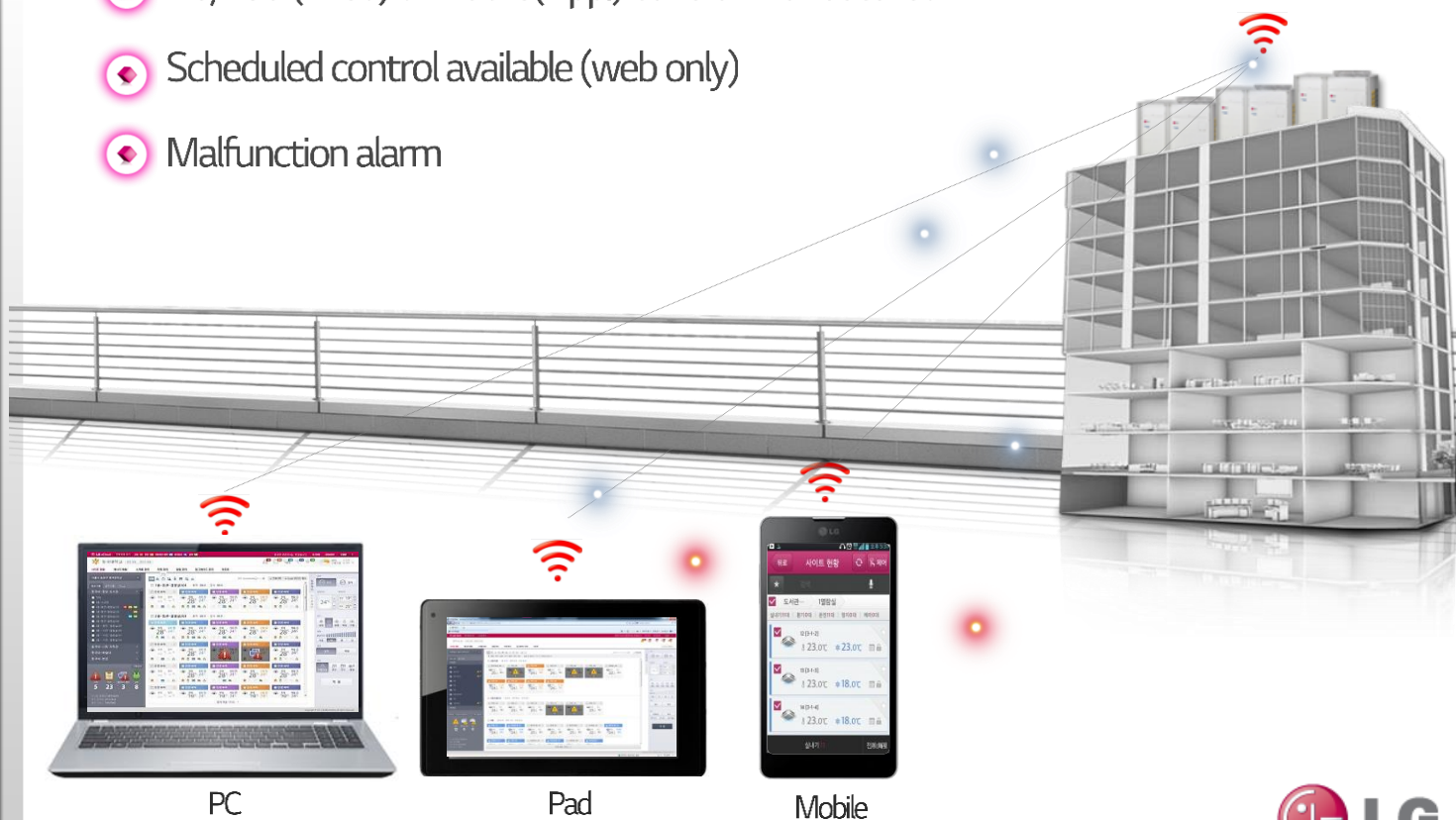
Easy Control



Group Control

E-cloud based convenient control

- Real-time monitoring & control (operation, temp., etc)
- PC, Pad (Web) & Mobile(App.) control with secured ID
- Scheduled control available (web only)
- Malfunction alarm



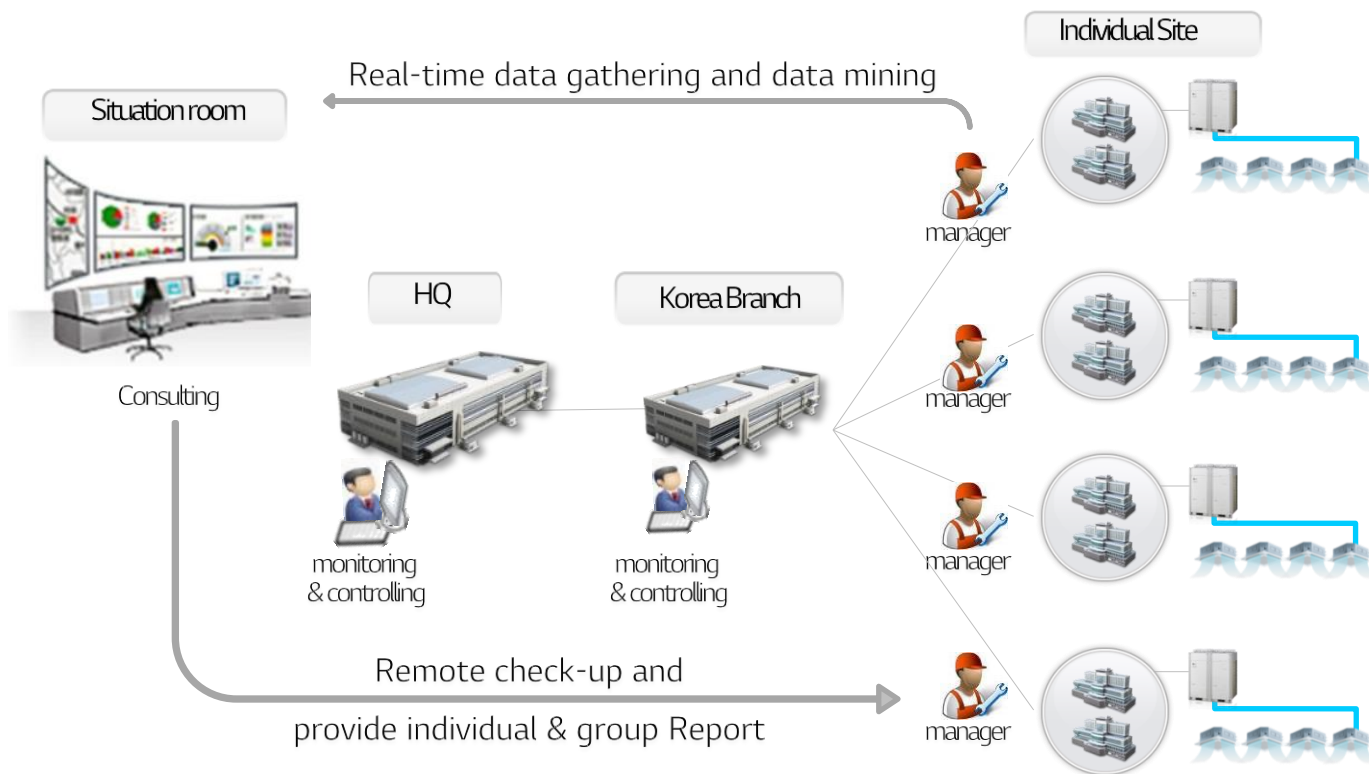


Easy Control



Group Control

Hierarchical group management

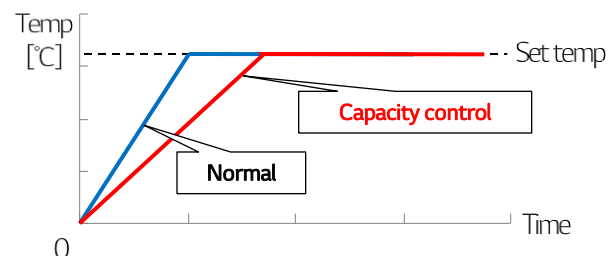
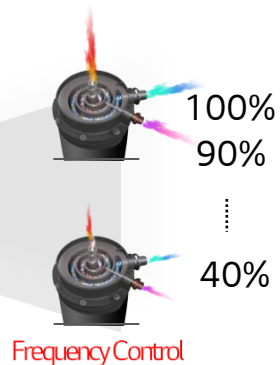
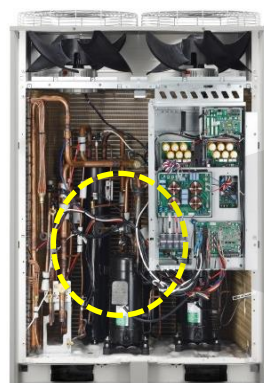


Monitoring summarized information of multiple sites
- Operation ratio / Energy Usage / Component Failure Status



Minimizes comfort level decline

- ◈ No need of turning off
- ◈ Subtle change on indoor comfort level



Compare to Fuel Efficiency

*Engine Tune-up
Eco driving mode*



EMS report : indicator for wiser energy management



Energy saving
logics



Energy
Consulting

2016 하절기 상시 EMS 관리 결과 보고서 - 대구 남구 보건소 -



LG전자
하이-영솔루션

II. 에너지 이용 패턴



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I. 현장 개요

남구 보건소 에너지 관리 현황



- 건물명: 남구 보건소
- 건물 용도: 공공기관
- 설비명: 공조설비 (냉난방)
- 설비명: 조명
- 설비명: 엘리베이터
- 설비명: 기타
- 설비명: 기타
- 설비명: 기타



최근 8월 1일 및 8월 15일 에너지 사용 현황

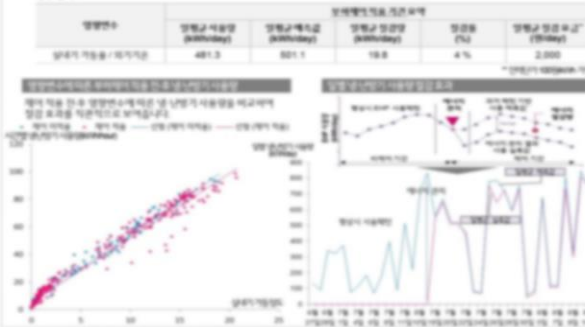
구분	1일	2일	3일	4일	5일	6일	7일	8일
냉난방 에너지 사용량 (kWh/month)	15,090.5	11,816.4	8,862.0	1,641.1	2,194.3	6,762.3	13,367.6	16,277.3
전력 에너지 사용량 (kWh/day)	489.8	407.5	215.5	54.7	70.8	226.4	430.9	525.1

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III. 절감 실적 결과

에너지 절감 실적 현황

- 에너지 절감 실적 현황
- 절감 실적



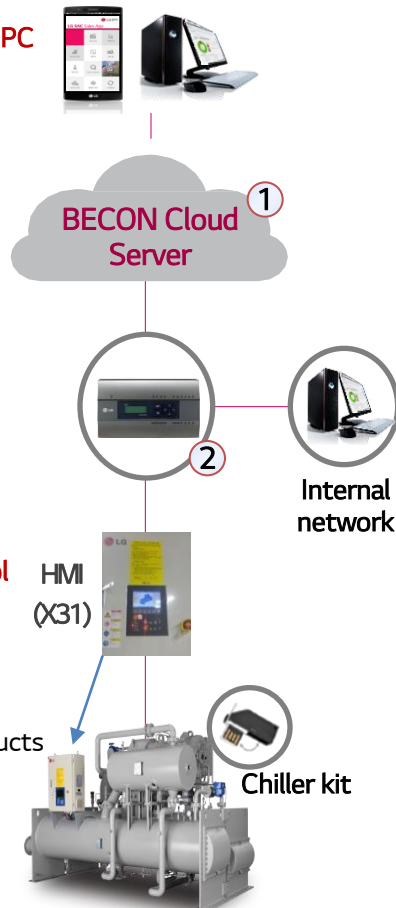
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Chiller connectivity

* What are available with BECON Cloud Chiller?

- Operation monitoring
- Motor current control

Monitoring on PC
& mobile



Monitoring & Control

- * Connectable to various chiller products
Turbo, Screw, Absorption, ISC
(IDU control available)

Operation monitoring on BECON Cloud sever

1

유량	입구(°C)	출구(°C)	온도(°C)	압력(kg/cm²)
0.0	0.0	0.0	0.0	0.0

냉수 유량 (m³/h)	냉수 온도 (°C)	입구(°C)	출구(°C)	압력(kg/cm²)
0.0	0.0	0.0	0.0	0.0

Operation monitoring on ACP IV

2

증발기	입수온도	출수온도	냉매온도	압력
유량 OFF	16.1°C	19.2°C	-2.0°C	0.02 kg/cm²

모터전류	오일온도	배어일온도	토출온도
4.0 A	-2.8°C	-0.2°C	-1.4°C

입수온도	출수온도	냉매온도	압력	
유량 OFF	-14.4°C	-11.4°C	-3.0°C	-0.24 kg/cm²

BECON Cloud is an optimized management solution for HVAC facilities



Repair Cost

- Detect minor troubles to prevent serious malfunction or the entire breakdown of facility

Maintenance Cost

- Minimize operating cost and resources by simplifying HVAC management task

Product Life

- Data based systematic management extends product life
- Overhaul cleaning



Easy Control

- PC / Pad / Mobile
- Real-time/scheduled

Quick Repair

- Non-stop service from detection to repair

Reports

- Data summary and analysis
- Equipment & performance
- Repair history



Lower Electric Fee

- Improve efficiency
- Save energy by logic

Energy Consulting

- Energy consumption patter
- Visualization of saved amount and bill

LG Electronics HVAC & Healthcare

Hi-M.Solutek