NEWSLETTER – 2 – APRIL 2012

Inspection of HVAC Systems through continuous monitoring and benchmarking

welcome – welcome – welcome – welcome – welcome – welcome – welcome – wel

by project coordinator Dr. Ian Knight

Welcome to the second newsletter from the iSERV project.

This newsletter looks in detail at the web-based aspects of iSERV including the database and website. The premise of the database is that good energy efficient HVAC practice can be found anywhere and that any organisation should be able to contribute to improving our understanding of what it is possible to achieve.

The database website and project website are key components in iSERV as they are the main interface between the end users of iSERV and the project. They provide access to the free-to-use HVAC energy management system for HVAC system owner/operators, as well as access to support via the project partners.

This issue of the newsletter provides a focus on these elements and how interested parties and potential end users of these free resources may become involved in the project. For potential users interested in discussing the project in person, iSERV holds regular workshops – the next one being in Liege, Belgium on the afternoon of the 10th of May.

I hope you find this issue of the newsletter useful and look forward to welcoming more end users onto the iSERV database which is now open for all interested parties to use.

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iSERV on the internet – iSERV on the internet – iSERV on the internet – iSERV on th

What you'll find on www.iservcmb.info

The iSERV project is designed to be inclusive of the views of all stakeholders involved in HVAC systems. The web-based iSERV database is the most obvious example of this, as it allows any stakeholder to participate and include the performance of their systems or HVAC components in the project debate and outcomes.

It is therefore important for us to inform stakeholders about progress and to provide easy avenues to get in touch, exchange ideas and concerns and download information material in different languages. The iSERV website has been designed to link the project team to interested parties in whole Europe. Since the latest update it provides detailed information on participation of a wide range of stakeholders, an animated presentation on the project's methodology and a public forum.

iSERV Website- CONTENT

Information: What is the project about?

Participating: How to participate? … for
- facility managers,
- HVAC system and component manufacturers,
- legislators and policymakers,
- owners and operators of HVAC systems

Partners: To get in contact directly

Workshops: Results of previous workshops

Forum: Discuss your questions, ideas, concerns, … with the iSERV team

Events: Workshops organised by the iSERV team or with iSERV participation

News – Links - Downloads

www.iservcmb.info

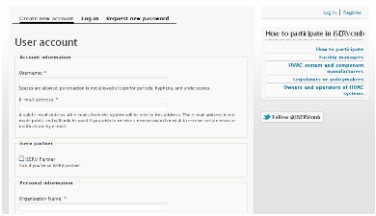
We kindly invite you to visit our website, share your experiences on the forum and/or directly get in touch with one of the project partners.

How does participation work? – How does participation work? – How does particip

Seven steps to using the iSERV application

1

REGISTRATION
create a new account



To establish a first contact with the project partner who will supervise your HVAC system there are several possibilities:

- One of the project partners gets in contact with you, tells you about the project and asks you if you are interested in participating.
- You hear about the project and contact one of the project partners directly by phone or email.
- You hear about the project and register on the website: http://www.iservcmb.info/user/register

2

SIGNATURE
terms and conditions

Participation within the iSERV project is subject to specific terms and conditions. For iSERV the terms and conditions refer to the use of your monitoring data within the project, to data protection and anonymisation of data.

The document "Terms and conditions for participation in the IEE iSERV project" needs to be signed by one representative of the organisation who wants to take part and one iSERV partner. It will be provided to you shortly after registration.

3

DOCUMENTATION
fill in the spreadsheet

The iSERV spreadsheet is a tool which allows you to initially document your HVAC system(s). This information forms the basis of your database account for the HVAC system(s) on the iSERV web-based application. Time spent completing this sheet accurately and fully is rewarded with better guidance and advice from iSERV. Your supervising project partner can provide guidance if necessary. More information on the spreadsheet is provided below.

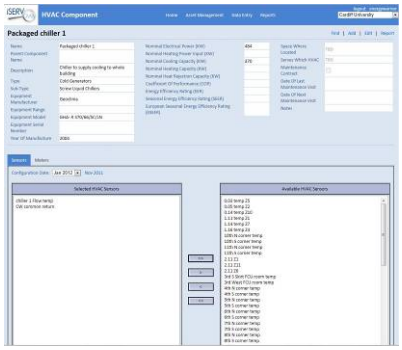
4

LOG IN
get your database account

Your HVAC system will be established within the iSERV database application using the data provided in the spreadsheet. You are able to log in to amend details or run reports on your system anytime with your personal password.

5

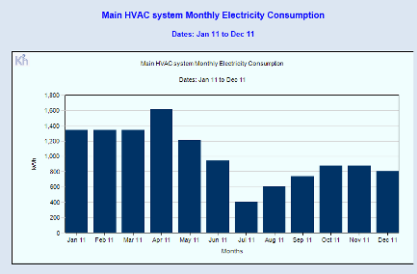
CHECK
control your system data



You will be able to alter the details of your HVAC system when logged in to the iSERV application. Before starting to provide data, please review the system data on the database to ensure it is correct. You are able to alter the system data if needed. Any future changes can be set to occur from a given month, thereby preserving any previous system configurations.

6

MONITORING
provide your monitoring data

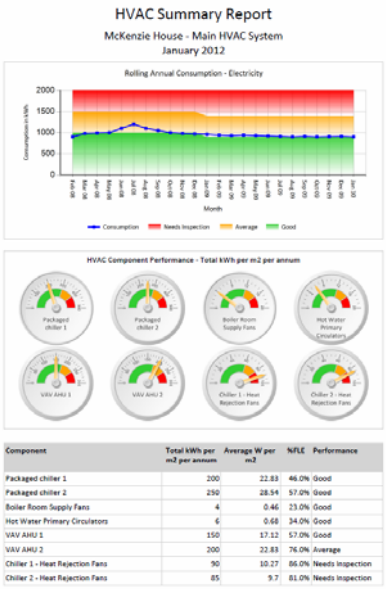


You need to provide monitoring data on the electricity consumption of at least the chiller, but ideally on all HVAC components in your system. The time intervals between energy consumption data collection should preferably be less than one hour (ideally 15 minutes) and ideally in the form of meter readings not just consumption in a time period. This data should be sent to iSERV at least once a month. You can send your data through:

- Automatic built-in web server transmission
- Email
- Direct data entry on the database account

7

FEEDBACK
receive analysis reports



Component	Total kWh per m2 per annum	Average W per m2	%FLE	Performance
Packaged chiller 1	200	22.83	46.0%	Good
Packaged chiller 2	250	28.54	57.0%	Good
Boiler Room Supply Fans	4	0.46	23.0%	Good
Hot Water Primary Circulators	6	0.68	34.0%	Good
VAV AHU 1	150	17.12	57.0%	Good
VAV AHU 2	200	22.83	76.0%	Average
Chiller 1 - Heat Rejection Fans	90	10.27	86.0%	Needs Inspection
Chiller 2 - Heat Rejection Fans	85	9.7	81.0%	Needs Inspection

Once your monitoring data has been uploaded you will start to receive feedback on the electricity consumption of your system, with annual consumption figures available after 12 months worth of data have been supplied. Historic data is also fine if you have it available.

By the end of the project, the reports will have expanded to provide you with the overall performance of your HVAC system and components against benchmarks, along with possible energy conservation opportunities.

This will allow you to improve the energy efficiency of your system and save energy. The IEE HARMONAC project findings suggest energy savings of between 5 – 60 % are likely for many HVAC systems.

Animated presentation available: http://www.youtube.com/user/iSERVcmb?feature=watch

iSERV spreadsheet – iSERV spreadsheet – iSERV spreadsheet – iSERV spreadsheet

What is the iSERV spreadsheet and what are the benefits of using it?

For many HVAC systems there is little or no up-to-date coherent information on the system components or the areas served by the HVAC system. This lack of data can be a major problem for EPBD Inspections, leading to either more costly inspections and/or less effective inspections.

The iSERV spreadsheet is designed to link together in one space all the information about HVAC system components; areas and activities served; and the meters and sensors monitoring the HVAC system and spaces. The effectiveness of this approach means this spreadsheet has been endorsed by both CIBSE and REHVA as a good way of collating this information.

"The Excel spreadsheet developed by the iSERV project is a unique tool to structure and organise the information of HVAC systems... It aligns perfectly with the need to improve the value of HVAC system inspections by having collected and gathered pertinent information prior to the inspection…"
Olli Seppänen,
REHVA General Secretary.

The spreadsheet is available in a number of languages and can be downloaded from the iSERVcmb website www.iservcmb.info by anyone wishing to collate information on their HVAC systems in one place. The spreadsheet requests the information shown below:

Building	Utility Meter	HVAC sensor	HVAC system	HVAC component	Schedules of Set-point&Occupation	Space
Building Name	Name	Name	Name	Name	Name	Name
Description	Description	Description	Description	Description	Description	Description
Organisation Name	Meter Type	Sensor Type	Main HVAC system	Component type	Time Control Method	Floor Area (m2)
Site Name	Unit Type	Unit Type	HVAC type	Component sub-type	Date Range: Applies From	Sector
Sector	Multiplier	Duct/Pipe Area (m2)	System Classification	Serves which HVAC system(s)	Date Range: Applies To	Activity
Address	Space Where Located	Unique Sensor ID	System Sub-Classification	Space Where Located	RH Range: Upper Limit	Served By HVAC(s)
Town	Unique Meter ID	Data Starts From	Data Starts From	Nominal Electrical Power Input (KW) OR/AND Meter Name	RH Range:Lower Limit	Utility Meter(s)
Postcode	Data Starts From	End Month	End Month		Heating Setpoint / Date & Time	Schedule of Setpoints, RH and Occupancy
Country	End Month		Sensor Name	Sensor Name	Cooling Setpoint / Date & Time	Sensor Name
Control of HVAC Temperature	Parent Meter Name		Meter Name	Data Starts From	Relative Humidity / Date & Time	Data Starts From
Construct Month			Control of Flow Temperature	End Month	Occupancy / Date & Time	End Month
Data Starts From				Parent Component		Control of HVAC Temperature
End Month				Nominal Heat Rejection Capacity (KW)		HVAC Component Physically located here
Property Reference Code				Coefficient of Performance (COP)		Utility Meters Physically located here
GPS - latitude				Energy Efficiency Rating (EER)		Space Notes
GPS - longitude				Seasonal Energy Efficiency Rating (SEER)		
Gross Internal Area (m2)				European Seasonal Energy Efficiency Rating		
Conditioned GIA (m2)				Manufacturer		
Schedule				Range		
Main HVAC				Model		
Building Notes				Serial Number		
				Year of Manufacture		
				Nominal Cooling Capacity (KW)		
				Nominal Heating Capacity (KW)		
				Nominal Heating Power Input (KW)		
				Maintenance contract		
				Maintenance trigger		
				Date of last maintenance visit		
				Date of next maintenance visit		

Cells in light red show data that is chosen from embedded lists

Cells in orange show data that is chosen from data entered elsewhere in the spreadsheet

Cells highlighted in grey colour acquire their content automatically from other cells.

Cells in green show data that can possibly be sourced from the Eurovent Certification HVAC Database

Cells highlighted in blue colour show optional data, but which is still very useful to owner and iSERV

It can be seen that, despite the data requirements looking significant, there is actually only quite a small amount of essential data needed initially. There are significant numbers of cells which are either selected from predetermined lists, previously entered data or which are 'optional'. The optional cells do however contain important information for the wider analysis of the data for both the HVAC system owners' reports, Inspection purposes and the iSERVcmb project. End users are therefore urged where possible to also complete this information where possible and where appropriate.

The spreadsheet itself is currently available (mid-March 2012) in English, Greek, Italian, Portuguese, Slovenian, Dutch, French, Spanish and German. Further translations are being prepared and will be notified to registered end users when they are ready. These translations will be applied to the online database application as well.

There is a FAQ document available for the spreadsheet which provides tips and tricks on completing the spreadsheet. This can be downloaded from the same part of the iSERV website as the iSERV spreadsheet.

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iSERV public workshop – iSERV public workshop – iSERV public workshop – iSERV

Results of the second iSERV public workshop in Torino/Italy on February 2nd, 2012

The second public iSERVcmb workshop was successfully held in February 2012, hosted by the Polytechnic University of Turin.

The iSERVcmb workshops are open to all stakeholders and have included building owners, facility managers and administrators, HVAC system designers, manufacturers, inspectors and legislators to date.

The main aim of the Turin iSERVcmb workshop was to provide a networking platform between registered end users and professionals interested in the project. Defying the heavy snowfall, the workshop attracted about 60 participants.

During the workshop, participants were presented with the iSERVcmb data spreadsheet and given a preview of the online database. The program included three parallel table sessions for building owners and facility managers, HVAC designers and manufacturers, and legislators and inspection representatives. In each table the attendees were given the opportunity to discuss the project with professionals already registered to the project and to share information regarding their experience. Each table was supported by iSERV partners who provided more in depth information regarding the project's development.

Overall, the participants provided positive feedback to the projects aims and tools. The workshop drew the attention of three distinct end user groups:

- End Users of new or well-maintained HVAC systems interested in understanding whether new systems are more efficient than older ones.
- End Users of large companies seeking to standarize their energy costs.
- End users/ Facility managers of large scale buildings seeking to deal with their HVAC operational and control problems through the analysis of their HVAC systems offered by iSERVcmb.

The following table summarizes the most important and interesting comments from participants of both workshops to date, and the iSERV project team's response.

Stake-holder group	Comment	iSERV response
Building owners and facility managers	Concern about the **data requirements for the spreadsheet's** input as the initial data provision to the database.	The spreadsheet has been continuously upgraded to support this initial data provision. It now provides a data validation function to ensure the minimum crucial data needed to register a building to the iSERV database has been provided. Example buildings are embedded in this spreadsheet, while FAQ and tutorials to support completion of the spreadsheet are available from the project website. The data requested is necessary to provide accurate and useful feedback to the end user.
	Questions about the **validity of the iSERV reports** based on less comprehensive monitoring systems e.g. electricity meters for only the Chillers , not the whole HVAC system.	Every user can access a standard set of reports on their HVAC system's overall performance against bespoke benchmarks by providing the minimum information required to register. If more information is provided, more reporting options will become available. Where metered data is not provided default consumption values for the HVAC equipment noted are estimated. These will tend towards predicting higher consumption figures than might actually be occurring.
	Concern about the **investment needed to install a monitoring system** that complies with the minimum participation requirements.	Findings from the IEE HARMONAC project suggest HVAC monitoring costs will normally be comfortably covered by energy savings achievable from a better knowledge of the energy consumption patterns of the system.
Legislators and HVAC inspectors	Positive reaction: **useful platform to acquire information** on the end user level and to improve the performance of inspections.	
HVAC designers and manufacturers	Positive reaction on focus on monitoring as a measure to achieve energy savings.	
	Positive reaction on the **IAQ reporting and benchmarking**.	
	HVAC systems do not always represent the lion's share of a buildings total energy consumption load, hence, it would be useful to **account for small power appliances and lighting loads**.	End Users are not required to provide details regarding lighting and small power appliances loads. Nevertheless, if available, they can upload this information directly to the iSERVcmb online database once they register their HVAC system. This information will be included in the monthly energy consumption analysis of the registered building.

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Newsletter 3: The third issue of the iSERV newsletter is expected to be released in **early summer 2012**. It will provide information about:

- The iSERV online application – first reactions, use, systems, first findings
- Possibilities for analysis and recommendations arising from use of iSERV

Next public workshop: Liege, BELGIUM
Date: 10th May 2012
Registration: http://www.iservcmb.info/event/iserv-public-workshop-liege-belgium

Further workshops will be organised in Greece, Austria, Slovenia, Portugal, Belgium and the UK (dates to be announced on http://www.iservcmb.info/events). Please register on the iSERV website to receive advance notification of exact dates and locations.

iSERV @ REHVA Annual Conference: Timisoara, Romania
Date: 19th and 20th April 2012
Information and registration: www.rehva-am2012.ro
Further assistance: office@dosetimpex.ro

The REHVA Annual Conference and meeting is organized in cooperation with the Romanian Installation Engineers Association (AIIR) and the Romanian General Association for Refrigeration (AGFR) in Hotel Timisoara and the "Politehnica" University of Timisoara in downtown Timisoara. Both are situated in the cultural and historic center of Timisoara overlooking the Opera Square.

iSERVcmb's coordinator, Ian Knight, will give a presentation of the iSERVcmb project at REHVA's Annual Conference, on the 19th April 2012. The presentation is titled " Energy use of existing air-conditioning systems" and will be held at 11:00am in Hotel Timisoara. On the 20th April 2012, at 13.00 iSERVcmb will be organizing a workshop for the conference's participants. The concept of this workshop is to briefly introduce the work previously done, with focus on relevant tools and findings for the audience, as well as to give a chance to the participants to ask questions and discuss about the applicability, ideas and concerns related to the project.

project partners – project partners – project partners – project partners – project p

Welsh School of Architecture, Cardiff University UK (Project co-ordinator)		**K2n Ltd** UK	
MacWhirter Ltd UK		**National and Kapodistrian University of Athens** Greece	
University of Porto Portugal		**Politecnico di Torino** Italy	
Université de Liège Belgium		**Univerza v Ljubljani** Slovenia	
University of Pecs Hungary		**Austrian Energy Agency** Austria	
REHVA EU		**CIBSE** UK	

iSERV Steering Group Members:

SWEGON AB		**Camfil Farr**		**SKANSKA**	

For contact details please visit: http://www.iservcmb.info/partners

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