

Ness Facility Navigator

**Comprehensive engineered
infrastructure management solution**





Ness Facility Navigator

Comprehensive engineered infrastructure management solution

What is Ness Facility Navigator?

Facility navigator gives the organization a one stop solution for managing, retrieving and analyzing critical engineering information:

- ✚ A unique platform with data analysis functionality based on data driven drawings.
- ✚ Enables to determine and retrieve any engineering data from different systems.
- ✚ Different levels of engineering data to be displayed through a user-friendly graphic interface.
- ✚ Uses CAD drawings to consolidate data and visuals.
- ✚ A comprehensive solution that combines active data from control modules with passive data from infrastructure tools.

The Platform's Concept

Facility Navigator has proven success in advancing facility management, reducing cost and preserving valuable information in over 400 of its customers worldwide.

Ness Facility Navigator Why?

Using the Facility Navigator ensures that you will be able to manage, maintain and locate all of physical assets in your organization.

More specifically to be able to virtually navigate through your organization to locate where exactly a piece of equipment is positioned and with regards to essential infrastructure such as water and electricity to plan and control their maintenance schedules and to generally locate and manage effectively all assets in the buildings or sites which your organization resides.

Critical Management

Reduce response time to any downtime or crisis within your organization; prevent damage due to misinformation (This can save lives).

The damage created by closing the wrong valve, shutting the wrong switch or cutting the wrong pipe can be devastating for an organization in a manner that will leave its mark for years.



The Power of ERP with Ness Facility Navigator

Ness Facility Navigator is connected to different ERP platforms such as: SAP, Oracle Application and more.

The connectivity of the alpha-numeric ERP platform together with the graphical interface of the Facility Navigator gives the organization the ability to control its resources with all aspects (visually and alpha-numeric).

What If

Find your alternative route for any critical or non critical system in the organization (prevent the downtime during maintenance or brake downs).

View “what if’s” in your planning phase and find all the information you need at your finger tips.

ROI (Return on investment)

Time and resource savings are the key elements in the ROI module, due to the high cost of professional resources.

Facility Navigator contributes significantly to improved efficiency of resources and hence to reduced costs and better ROI.

The Application

Facility Navigator is a modular application so that customers can build up as many modules as they require. Information is displayed upon a graphic layout so not only is the information stored and managed, but also graphically displayed to exactly represent the physical location.

System modules

Facility Navigator modules include:

Space Utilization Module (SUM)

Accurately and promptly monitor any organization’s floor space to realize needs and usages.

Asset Management Module (AMM)

Visually track, control and define the facility’s assets that include all the equipment in an organization such as: electric boards, chairs, tables and air conditioners.



Electricity Module (EMM)

Maintain and administer over all the electrical infrastructure systems, showing system connectivity.

Safety & Preventive Management Module (SPM)

Allows monitoring all your safety and preventive systems, presenting the information graphically and in alphanumeric tables.

Voice & Data Network Management Module (VDNM)

Interoperates with enterprise infrastructure systems, manages communication network configurations both in doors and out.

Presents system connectivity throughout the organization.

Piping Management Module (PMM)

Visually tracks, controls and defines the facility's piping systems, liquids, medical gases and sewage, throughout the organization.

That includes all equipment and connectivity within the systems, piping, valves, manholes, pumps, etc.

Heating, Ventilation and Air-conditioning Management Module (HVAC)

Enables to track, administer and maintain over all the HVAC systems in your facility, presenting the information graphically and in alphanumeric tables.

Key Management Module (KMM)

Helps you manage the complex keys (to doors and gates) distribution structure in your organization, including key holders and entrance rights to the different rooms.

History Management Module (HMM)

If history of all the changes done to your infrastructure is important to you, the history management module will provide the tools required to maintain this information.

Localization Module (Wireless Technology)

Real time localization and data entry for any required asset within the organizations building or campus based on wireless technology.

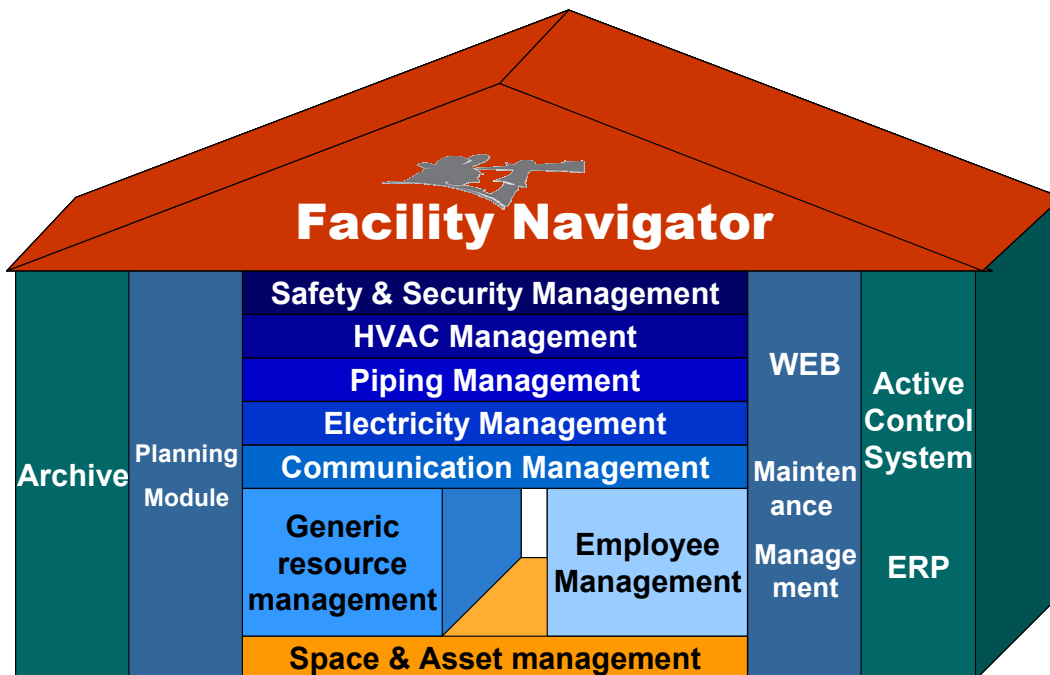


System Modularity

While the above mentioned is adequate for facility and infrastructure management, additional efforts have to be made when planning and upgrading infrastructures. It is essential to be able to trace all your assets and their connectivity, and to view a complete and dynamic layout of each of the systems which the infrastructure is comprised of.

The separation into basic elements: Space, Assets, Electricity, Piping, Voice & Data Networks, Heating Ventilation and Air-conditioning Systems, provides a deep and elaborate description of each of these elements in an infrastructure as a complete system to provide a comprehensive source from which to manage and maintain these elements as a whole.

- + Trace connectivity lanes.
- + Manage loads on the systems.
- + Perform extensive and all-inclusive maintenance instead of pinpointing certain areas once at a time.
- + Assist in designing and planning organizational restructuring.
- + Create different "What if" scenarios, and apply them to the infrastructure as part of the planning process.
- + Plan emergency procedures based on each element.
- + See the elements in their entirety and not just as part of a section pertaining to a specific location.





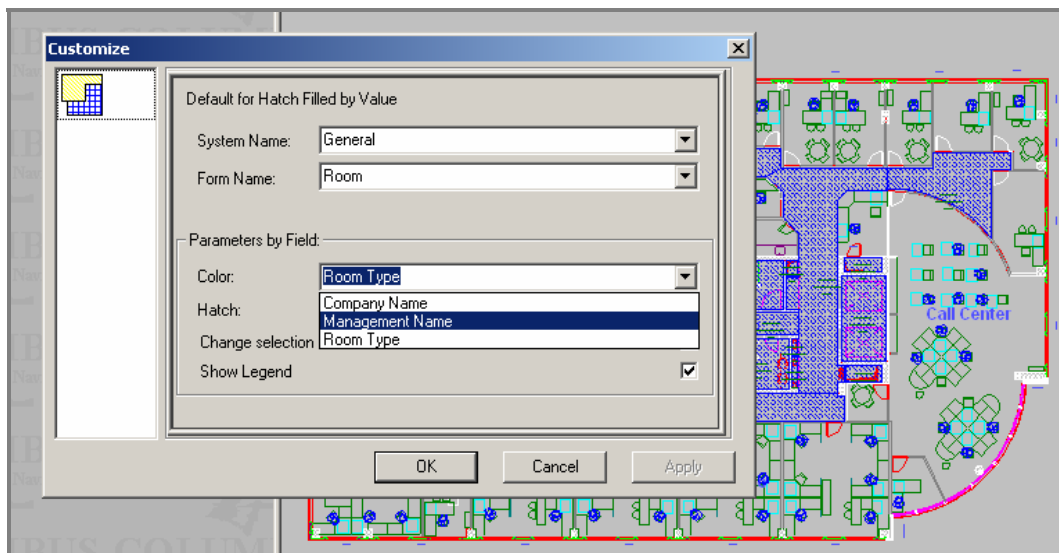
Comprehensive Solution

The comprehensive solution refers to the As-Made engineered management and includes the following system functionality.

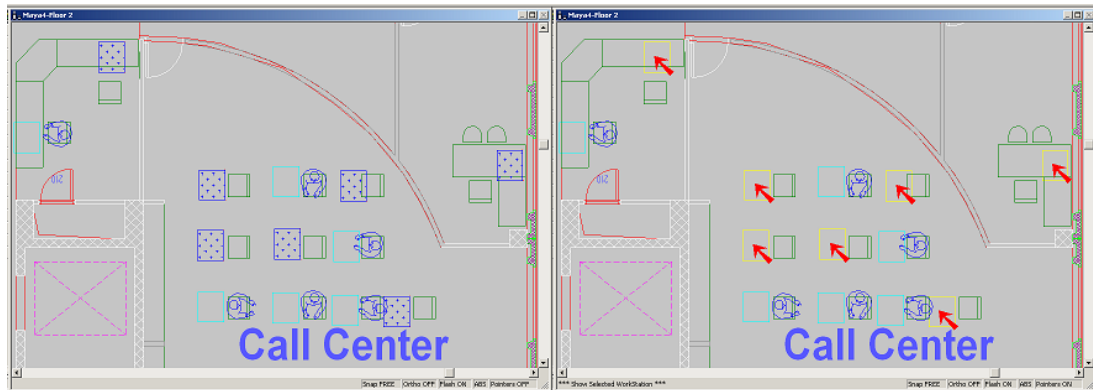
Space Utilization Module (SUM)

SUM is an unparalleled and sophisticated module, which enables accurate monitoring of any organization's space needs and usage. Our solutions are designed, on the one hand, to keep you informed at your organization real-time space-related information and visuals in both physical and geographical layers on top of CAD layouts, and on the other hand, to deliver all the interfaces needed for a front end in a User-friendly manner.

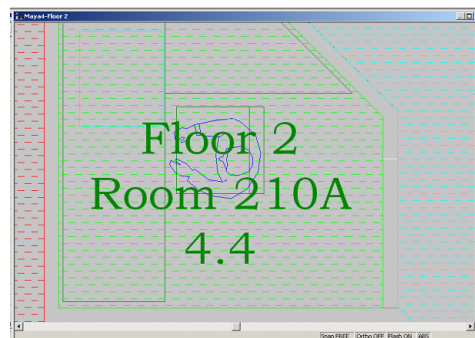
Features include but not limited to:



- ✚ Colorize scaled maps by user-defined values or other database parameters.
- ✚ Calculate space usage by floor, department, room, etc.
- ✚ Define and associate personnel, assets, and spaces according to organizational hierarchy and guidelines.



- ✚ Use different colors, icons, or imported photographs for easy identification of departments, employees, assets or any other category of your choice.
- ✚ Relocate employees and their assets in the system with the drag of a mouse that automatically sends an e-mail notification alerting others of the change.
- ✚ With a “drag-and drop” interface you can add, remove, redefine, or delete any object.
- ✚ View any required details on the graphical layouts.



- ✚ Carryout simulations of space scenarios to be analyzed and examined for possible outcomes.
- ✚ Use stack planes for easier planning.
- ✚ Track textual space related information either by a table or a specific form.



Asset Management Module (AMM)

AMM is an advanced module, which enables users to maintain and administer assets in an on-line database. AMM visually tracks all of your organization's assets and associated data. No more trails of incomplete information or frustrating assets searches. AMM, with a user-friendly graphic interface, provides the tools and ability to master aspects of asset distribution.

The AMM technology is effectively tuned to infrastructure systems and the exact asset location, through information, and linkage to other attributed data. Whether it is an air conditioning system, electrical system, sprinkler system, space utilization, or voice & data network you can visually track, control, and define your facility's assets. AMM enables you to assess and forecast asset status.

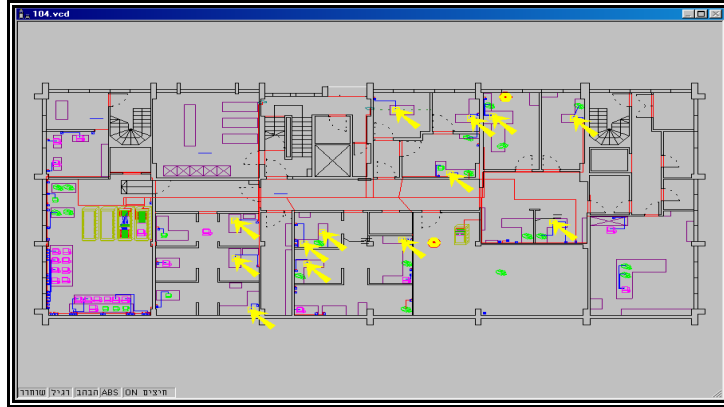
Features include but not limited to:

- Assign identifications to assets and view the data either in a sorted record table, or by graphic display of the selected items.

	Site Name	Building Name	Floor Name	Room Name	Barcode	Serial Number	Telephone No.	Login	PC Type
1	Ben Gurion	Alfa667	Basement	100	3866	3866	2565	565366	IBM PC586
2	Ben Gurion	Alfa667	Basement	14	3693	3693	2170	66665	IBM PC586
3	Ben Gurion	Alfa667	Basement	13	2661	2661	2172	456465	IBM PC586
4	Ben Gurion	Alfa667	Basement	9	3658	3658	2493	67967967	IBM PC586
5	Ben Gurion	Alfa667	Basement	RTE234	5471	5471	2571	456465	IBM PC586
6	Ben Gurion	Alfa667	Basement	7	3696	3696	2174	773679679	IBM PC586
7	Ben Gurion	Alfa667	Basement	18	3794	3794	2109		IBM PC586
8	Ben Gurion	Alfa667	Basement	18	3753	3753	2173	TT 2522	IBM PC586
9	Ben Gurion	Alfa667	Basement	11	3624	3624	54555	66666	IBM PC586
10	Ben Gurion	Alfa667	Basement	11	3730	3730	2168	456465	IBM PC586
11	Ben Gurion	Alfa667	Basement	11	3670	3670	2122	YU89893	IBM PC586
12	Ben Gurion	Alfa667	Basement	11	3869	3869	2401	325623	IBM PC586
13	Ben Gurion	Alfa667	Basement	10	3660	3660	8005	45645645	IBM PC586

Site Name	Ben Gurion	Disk Size		Pack Type	
Building Name	Alfa667	Memory Size		Network Card	
Floor Name	Basement	Drive A Type		Network Software	
Room Name		Drive B Type		Protocol Entry	
Barcode		CD ROM		IP-ADD	
Serial Number		Modem		MAC-ADD	
User name		Backup Tape		Operation System	
Telephone No.		Sound Card		Connecting Socket	
Login		Video Card		Cost	
PC Type		Screen Type		Installation Date	
Computer Designation	IBM PC486	Keyboard Type		Update Date	
Processor Type	80				
	IBM PC486				
	IBM PC586				
	oliveh 586				
	SUN-SPARC				

- Import objects from CAD systems in DWG and DXF format, or any other user-defined format.
- A simple "drag-and-drop" interface allows to: transfer, copy, or delete assets.
- Select from a symbol icon library, a suitable sign, to graphically define added assets, while making real-time adjustments (scale, rotate...).



- ✚ Visually track asset connectivity within the system (Jumpers, sockets, communication cables, routers, etc).
- ✚ Manage inventories and their exact location on scaled plans. Pointing to a specific object, displays its attached necessary data.

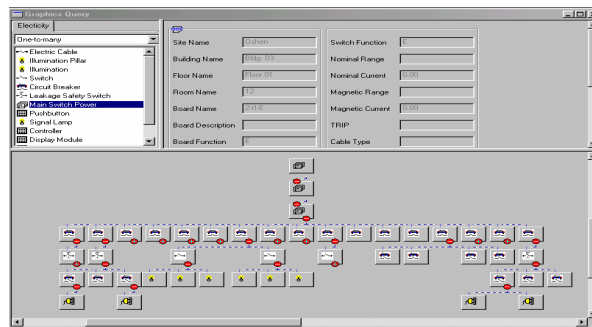


Electricity Module (EMM)

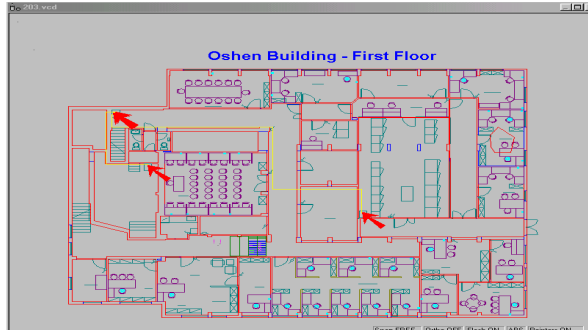
EMM is an advanced module for administration and maintenance for all electricity infrastructure systems in a facility both locally and globally. This platform attunes to organizations with numerous sites and constructions and/or facilities with numerous infrastructure systems.

Features include but not limited to:

- ✚ Track electrical components, by focusing on the infrastructure structure.
- ✚ Track a group of items, which answer specific criteria – The information of the tracked group is presented in a list, while simultaneously sorting the data and displaying it as a CAD layout.
- ✚ Carryout electricity implementation simulations of scenarios to be analyzed and examined for possible outcomes.
- ✚ Turns on/off electricity layers and groups of components as necessary.
- ✚ Displays connections between rooms and electrical boards; thus enabling to color all of the rooms that feed of the same electrical board.
- ✚ Track all item connectivity lanes and highlighting the entities that assemble the path.
- ✚ Receive all the circuits and edge sockets that feed a room, just from pointing at the specific location on the drawing.



- ✚ Chain supply of electrical boards between primary electrical boards and secondary boards, while enabling transition from a schematic formation to an As Made drawing.



- ✚ Associate an unlimited number of schematic diagrams and/or any kind of documentation to each item in the system.
- ✚ View all the circuits and edge sockets feeding a room, just from pointing at the specific required room.
- ✚ Correlate between switches and electrical boards to track feeding chains.
- ✚ Execute a virtual cut of a channel or group of cables to track all connection lanes and various components.
- ✚ Connect ability between As Made plans and schematic diagrams.



Navigator™ Safety & Preventive Management Module (SPM)

Facility Navigator™ SPM is an optimized platform that enables to administer and maintain over safety and preventive systems in your facility both locally and globally. This platform attunes to organizations with numerous sites and constructions and/or to numerous infrastructure systems in a facility.

Facility Navigator™ SPM exhibits the required information regarding security maintenance of data construction, equipments location, and facilities related to safety in a schematic diagram, as being part of the drawings alignment and/or in a graphic form as being part of the CAD plans. Moreover, this module is designed to track and display the approach to safeguarding possible information such as access lanes, penetration lanes, escaping lanes, construction description, energy and valuable systems in the construction, fire detection measures, main possible hazard locations in the construction, preventive & safety in the construction and etc.

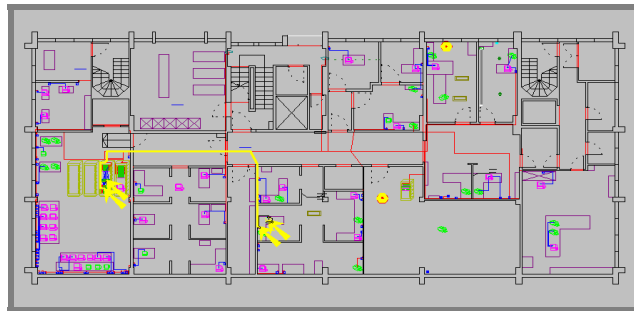
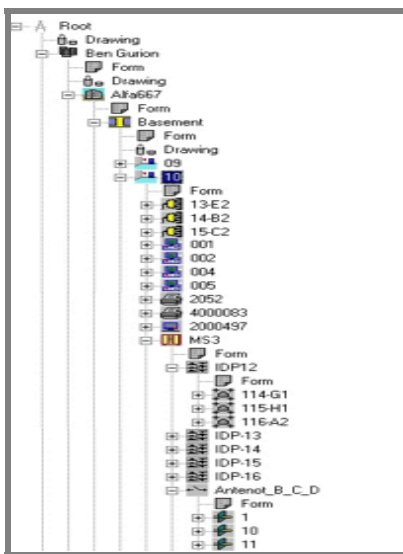
Features include but not limited to:

- ✚ Tracks every item from the system's entities by focusing on the parameters that assemble the item, and by using Wild Cards.
- ✚ Linking unlimited number of schematic diagrams and/or any kind of documentation to each item in the system.
- ✚ Building a sequence of commands to scenarios, equipments locations, and equipment's saving as display functions in an easy comfortable method.



Voice & Data Network Management Module (VDNM)

VDNM is an advanced module, which interoperates with enterprise infrastructure systems to achieve enhanced managing capabilities over communication network configurations both in doors and out. VDNM not only serves as a knowledge base for any network structure and its connections, but also enables the user to define various network components such as patch panels, sockets, equipment, routers, hubs, ports etc'. This module provides the rich-content services customers are demanding, since it also has the ability to communicate with an active control system interface such as HP Open view™ and Unicenter TNG®.



VDNM delivers the best in-class performance, quality, and reliability expected by business enterprises. The module enables complete transparency of communication network environments, while granting visuals of connections, locations, and component content that assemble the network. In addition, VDNM allows you to display any of the network required information both in schematic diagrams and scaled maps as CAD layouts. VDNM monitors, manages, and assures utmost accuracy and, maintains data effectively in your organization's infrastructure communication network.

Features include but not limited to:

- ✚ Track network components, by focusing on parameters that assemble the item.
- ✚ Track all item connectivity lanes, while highlighting the entities that assemble the path.



	Site Name	Building Name	Floor Name	Room Name	End Socket	Socket Type	Cabinet Name	Panel Name
1	Ben Guion	Alfa667	Basement	14	020-B1	DC	MS4	IDP-11
2	Ben Guion	Alfa667	Basement	13	030-C1	DC	MS4	IDP-11
3	Ben Guion	Alfa667	Basement	9	310-B1	DC	MS3	IDP-13
4	Ben Guion	Alfa667	Basement	RTE234	210-G6	DC	MS3	IDP12
5	Ben Guion	Alfa667	Basement	7	060-F1	DC	MS4	IDP-11
6	Ben Guion	Alfa667	Basement	7	410-D2	DC	MS3	IDP-15
7	Ben Guion	Alfa667	Basement	7	300-A1	DC	MS3	IDP-13
8	Ben Guion	Alfa667	Basement	6	260-H4	DC	MS3	IDP12

- ✚ Turn on/off layers and groups of components as necessary.
- ✚ Carryout implementation simulations of scenarios to be analyzed and examined for possible outcomes.
- ✚ Track a group of items, which answer to specific criteria – the info of the tracked group is presented in a list, while simultaneously sorting and displaying the data as part of the CAD layout or logic charts.



Piping Management Module (PMM)

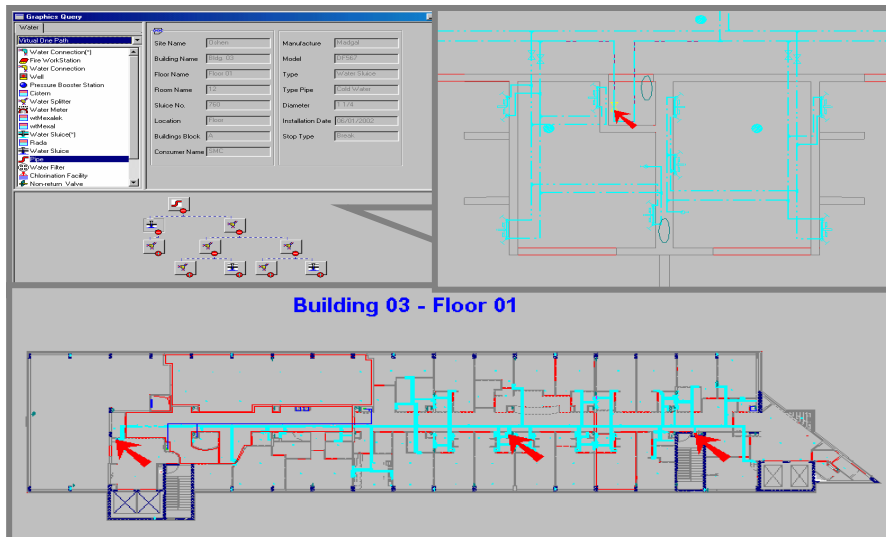
PMM is an unparalleled advanced module developed to administer and maintain all piping infrastructure systems in a facility, locally and globally. This module attunes to organizations with numerous sites and constructions and/or to facilities with numerous infrastructure systems.

PMM delivers the best in-class performance, quality, and reliability required by business enterprises. The module reveals a complete transparency of the system's logic, while granting visuals of connections, locations, and components, which assemble the system. In addition, PMM allows you to display the system's required information both in schematic diagram and in a scaled map as CAD layouts. PMM monitors, manages, assures utmost accuracy and maintains data regarding the piping systems in your organization

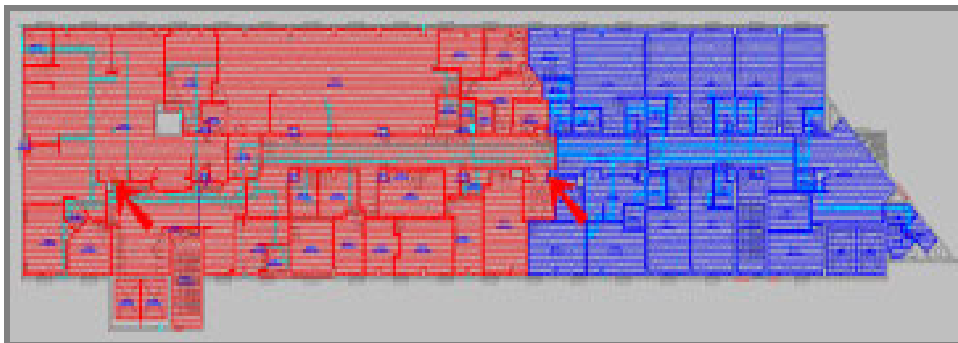
PMM not only serves as a knowledge base for any piping infrastructure system and its connections, but also enables the user to define the various piping sub-systems such as fuel, steam, sewage, oxygen etc. In Addition, each of those sub-systems defines the following entities by need: pumps, connectors, filters, water meters etc. This module provides the rich-content services customers are demanding

Features include but not limited to:

- ✚ Tracks taps, which need to be closed, to prevent the water-flow to buildings/ departments/ areas/etc.
- ✚ Tracks taps, which need to be closed, to dry-up pipes for maintenance or replacement.
- ✚ Track piping components, by focusing on the parameters that assemble it.
- ✚ Track taps and end-equipment to prevent water from flowing, as a result of cutting a specific pipe.



- ✚ carryout implementation simulations of scenarios to be analyzed and examined for possible outcomes.
- ✚ Tracks all item connectivity lanes, and highlight the entities that assemble the path.
- ✚ Execute a virtual cut over channel or piping to track all connected lanes and components.



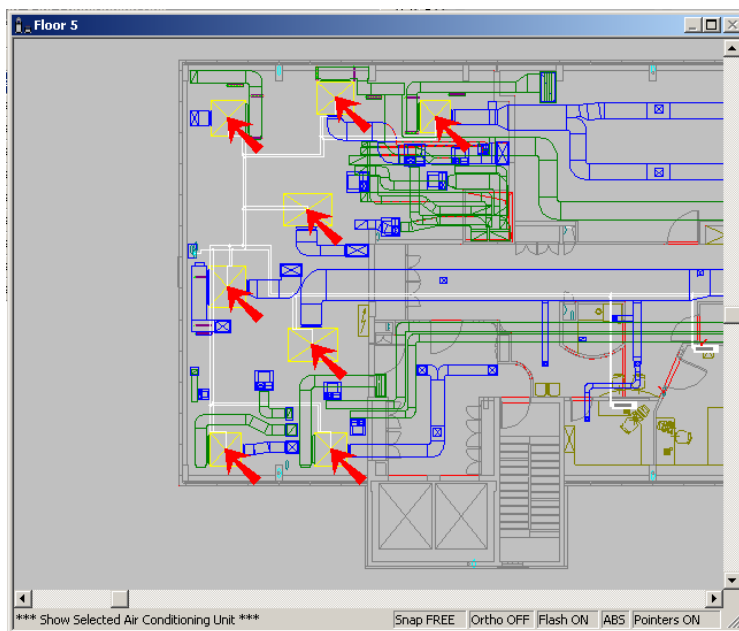
- ✚ Track a group of items, which answer specific criteria – info of the tracked group is presented in a list, while simultaneously sorting the data and displaying it as a CAD layout.
- ✚ Associate equipment to symbols from a symbol library.
- ✚ Present dry and wet areas after closing a valve.



Heating, Ventilation and Air-conditioning) Management Module (HVAC)

HVAC is an unparalleled and advanced module that enables administration and maintenance for all Heating,

Ventilation & Air condition infrastructure systems in your facility, locally and globally. This platform attunes to organizations with numerous sites, construction, and/or numerous infrastructure systems in a facility.



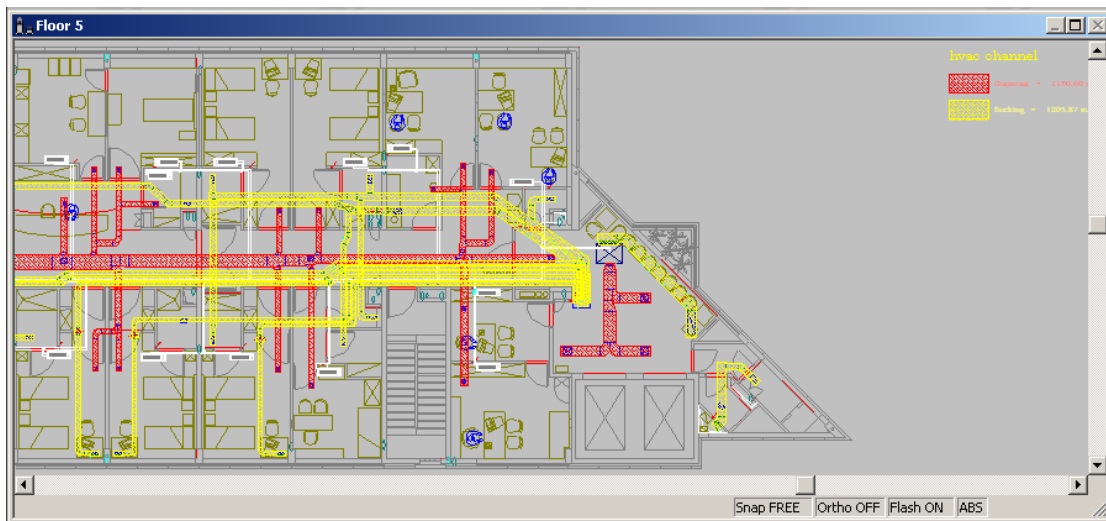
HVAC delivers the best in-class performance, quality, and reliability required by business enterprises. The module enables a complete transparency of the system, while granting visuals of connections, locations, and components that assemble the system. In addition, HVAC allows you to display any of the system's required information in schematic diagrams and in scaled maps as CAD layouts. HVAC monitors, manages, assures utmost accuracy and maintains data effectively in the organization's infrastructures heating, Ventilation and, air-conditioning systems.

HVAC not only serves as a knowledge base for any air-conditioning infrastructure system and its connections, but also enables the user to define individual components such as air hubs, splitters, chiller, pumps, ACU, fans, and etc. This module provides rich-content services that customers are demanding.



Features include but not limited to:

- ✦ Perform a virtual cut over a channel or pipeline to track all connected lanes and related components.
- ✦ Define connections between an ACU and its remote operations.
- ✦ Track HVAC components, by focusing on the parameters that assemble it.
- ✦ Associate relevant equipment to symbols from a library or use personalized symbols.
- ✦ Track a group of items, which answer to specific criteria. The info of the tracked group is presented in a list that is simultaneously sorted and displayed as a CAD layout.
- ✦ Correlation between all air hubs to air-conditioning units.
- ✦ Track all item connectivity lanes, while highlighting the entities that assemble the path.
- ✦ Hatch HVAC Channel by type.



- ✦ Carryout implementation simulations of scenarios to be analyzed and examined for possible outcomes.



Key Management Module (KMM)

It is as simple as it sounds; in any organization you have keys, cylinders, rooms and employees. The Facility Navigator™ using the Key Management module (KMM) displays the logic managing and securing your doors, it will provide you with tracking tools that will allow you to secure restricted areas from unauthorized personal, It will save time in looking for keys, it will maintain records of authorized personal to authorized locations and much more.

The screenshot shows a software window titled "Edit - Security - Employee". At the top, there is a dropdown menu labeled "Keys to Employee". Below this, the form is divided into two columns of input fields:

- Left Column:** Site Name (Hospital A), Building Name (Dana 16), Floor Name (Floor 05), Room Name (5), Employee Name (Alex Bloz), Employee Code (888).
- Right Column:** Identity Number (888), Employee Type, phone Ex. No., Telephone No. (8420383), Role, Status.

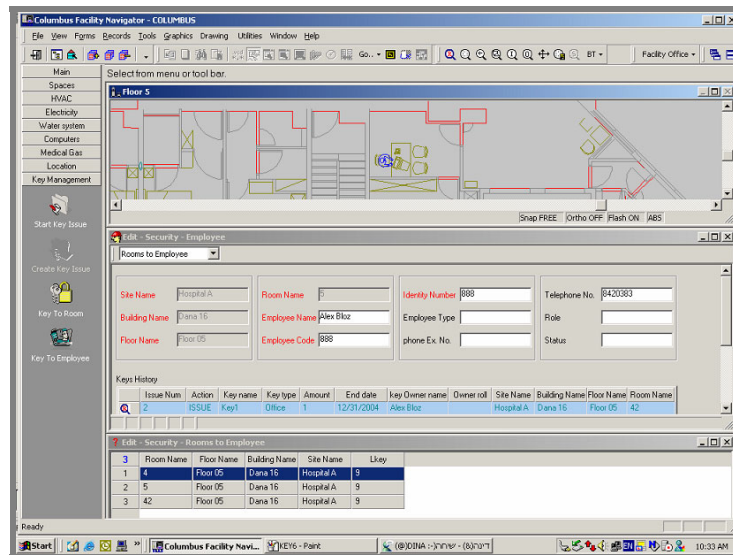
Below the form is a section titled "Keys History" containing a table with the following data:

	Issue Num	Action	Key name	Key type	Amount	End date	
	2	ISSUE	Key1	Office	1	12/31/2004	
		ISSUE	Key2	Doctor	1	12/28/2004	

A context menu is open over the second row of the table, with options: ISSUE, BACK, LOST, Edit.

Features include but not limited to:

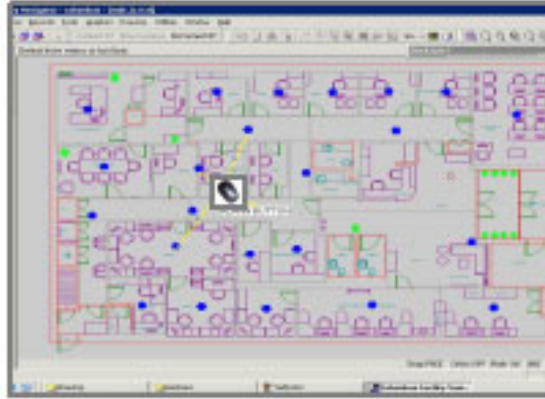
- ✚ A key can be issued to an employee by the system administrator (or any system authorized employee), once the key is issued it will update the system automatically showing the areas that the employee has access. The system will not allow the key issue if the employee type dose not meet the area authorization requirements.
- ✚ The system will track all keys supplied to the employee.
- ✚ KMM will provide you with the information required about lost and missing keys.
- ✚ KMM will allow you to pick a room on the drawing or with in the DB and show you all key holders. (you do not need to have the drawings for this)
- ✚ All cylinders will be traced by the system including type location and any other specification if required.



- All information is available graphically and textually.
- The KMM system can easily display quantities of keys provided for specific cylinders, rooms or employees.
- KMM using the Facility Navigator™ Report generator can easily supply management and security required reports for any area, key, room or employee.
- KMM is user friendly and can be operated by any appointed employee or administrator in the organization with minimum required training



Bluetooth tracking



In recent years, Bluetooth technology has been gaining rapid acceptance in the healthcare market.

This developed new innovative solution is using this advanced technology for performing intelligent search's and location tasks, as follows:

- + Patient tracking
- + Object tracking.
- + Staff connectivity.
- + Access patient bedside Information.
- + Retrieve information from equipment.
- + Optimize administration.
- + Reduce Errors.

Bluetooth typical network infrastructure

Bluetooth utilizes the following main components:

- + Software –Management Software.
- + APIs for programmers.
- + Hardware –Server and Access Points.
- + Firmware –Self developed Bluetooth stack.



Bluetooth End user devices Include

- ✚ Wireless Badge
- ✚ Hand Held Computer
- ✚ Laptop Computer
- ✚ Wireless Data Adapter
- ✚ Barcode Readers
- ✚ And more.

How does the Bluetooth tracking System Work with the Facility Navigator?

The Bluetooth access point can communicate and interrogate a connected device at any given time.

In some cases more than one access point discovers the device; the FN triangulation algorithm calculates the location of the device and displays the information graphically on a plan.

By such means the FN enables the user to interrogate the system for a specific location of any traced device, which may be connected to staff, patients and equipment.

The location is then displayed graphically on a layout drawing.

Methodology

Installation of Bluetooth access points in rooms, corridors and other locations on site.

Facility Navigator analyzes the selected locations prior to the installation and defines the optimal access point layout, in a manner, which will provide best coverage.

The Bluetooth access points are all connected to a Bluetooth server. The Bluetooth server is connected to the FN server.

Ness maps the access points in the FN drawing.

Each access point is given certain attributes in the FN software.

Ness also enters the different Bluetooth devices into the FN, enabling the user to specify specific device identity such as person, patient or equipment.



Typical Use

When the FN user needs to locate an object or a person, he brings up on screen the search form.

The appropriate search icon is then selected from the screen.

The FN then performs a specific search by communicating with the access points. This unique algorithm interpolates the Bluetooth data and provides an exact location within seconds of initiating the search.

Search initiation can be made manually and may also be triggered by an alarm.

Available features

- ✚ Distress Notification –Alarm systems on equipment, staff and patients.
- ✚ Asset Location of personal and equipment.
- ✚ Automatic data entry such as Utilization and Power consumption.
- ✚ Access control – Security and theft control.
- ✚ Parking Lot Control –Designated area alerts and more.



The difference between organization not using and using Facility Navigator

Organization's without Facility Navigator	Organization's using Facility Navigator
<p>In most organizations , drawings (manual or digital) and information (database or users memory), are not combined, not accessible and not retrievable in a manner which can be of use for the everyday tasks, and definitely not for analyzing “what if” scenarios and crisis management scenarios</p>	<ul style="list-style-type: none"> <li data-bbox="858 504 1484 645">✚ The facility navigator, utilizing it's unique engine, consolidates data, both graphically and textually, to one system accessible to all and easy to use <li data-bbox="858 649 1484 819">✚ Enabling users, subject to user permissions, to view, manage, query, analyze and see the implication of actions taken, or planned, on all systems and infrastructures

Deployment

MOD/DOD Israel Defense Force (IDF)

The IDF has chosen Facility Navigator™ Voice & Data Network module to document its nation-wide voice data and power networks infrastructure and hundreds of sites/camps. The Facility Navigator™ is providing the IDF the link between active information to passive infrastructure and with the visual control that is essential for any large-scale organization.

Motorola Israel

Motorola is a global leader in wireless, automotive and broadband communications. Motorola uses the Facility Navigator™ Space utilization module and Safety & Preventive Management Module to document and manage five centers with more then 20 buildings with over 4000 employees.

Facility Navigator™ Provides Motorola for the control required by law over all safety and security assets while attaining large saving in space utilization and planning for the future.



For further details please contact

Lior Edelman (eng.)

Sales & Marketing

Ness Technologies

Cell: +972-50-7309005

lior.edelman@ness.com

www.ness.com