2.4GHz wireless sensors

BeanScape[®] 2.4GHz User Manual



Version 1.5





Rethinking Sensing Technology

Beanair GmbH

BeanScape[®] 2.4GHz User Manual

2.4GHz wireless sensors

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1. TECHNICAL SUPPORT

For general contact, technical support, to report documentation errors and to order manuals, contact *Beanair Technical Support Center* (BTSC) at:

tech-support@Beanair.com

For detailed information about where you can buy the Beanair equipment/software or for recommendations on accessories and components visit:

www.Beanair.com

To register for product news and announcements or for product questions contact Beanair's Technical Support Center (BTSC).

Our aim is to make this user manual as helpful as possible. Keep us informed of your comments and suggestions for improvements.

Beanair appreciates feedback from the users of our information.

2. VISUAL SYMBOLS DEFINITION

Symbols	Definition
	<u>Caution or Warning</u> – Alerts the user with important information about Beanair wireless sensor networks (WSN), if this information is not followed, the equipment /software may fail or malfunction.
	<u>Danger</u> – This information MUST be followed if not you may damage the equipment permanently or bodily injury may occur.
1	<u>Tip or Information</u> – Provides advice and suggestions that may be useful when installing Beanair Wireless Sensor Networks.

3. ACRONYMS AND ABBREVIATIONS

AES	Advanced Encryption Standard
ССА	Clear Channel Assessment
CSMA/CA	Carrier Sense Multiple Access/Collision Avoidance
GTS	Guaranteed Time-Slot
kSps	Kilo samples per second
LLC	Logical Link Control
LQI	Link quality indicator
LDCDA	Low duty cycle data acquisition
МАС	Media Access Control
PAN	Personal Area Network
PER	Packet error rate
RF	Radio Frequency
SD	Secure Digital
WSN	Wireless sensor Network

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4. RELATED DOCUMENTS & VIDEOS

In addition to this User manual, please consult the related application notes, technical notes and videos:

4.1 APPLICATIONS NOTES

Document name (Click on the weblink)	Related product	Description
AN_RF_007- "Beanair_WSN_Deployment"	All BeanAir products	Wireless sensor networks deployment guidelines
AN_RF_006 - "How to extend your wireless range "	All BeanAir products	A guideline very useful for extending your wireless range
AN_RF_005 - BeanGateway [®] & Data Terminal Equipment Interface	BeanGateway ®	DTE interface Architecture on the BeanGateway ®
AN_RF_003 - "IEEE 802.15.4 2.4 GHz Vs 868 MHz"	All BeanAir products	Comparison between 868 MHz frequency band and a 2.4 GHz frequency band.
AN_RF_002 – "Structural Health monitoring on bridges"	All BeanAir products	The aim of this document is to overview Beanair [®] products suited for bridge monitoring, their deployment, as well as their capacity and limits by overviewing various Data acquisition modes available on each BeanDevice [®] .

4.2 TECHNICAL NOTES

Document name (Click on the weblink)	Related product	Description		
TN_RF_013 – « OPC configuration »	BeanScape [®] Premium+	The aim of this document is to help deploying the OPC DA and all associated services.		
TN_RF_012– « BeanDevice® battery life in streaming mode »	All the products	The aim of this document is to describe the autonomy performance of the BeanDevice [®] SmartSensor [®] and ProcessSensor [®] product line in streaming and streaming mode.		
TN_RF_011 – « Coexistence of Beanair WSN at 2.4GHz »	All the products	This document aims to highlight the issues affecting co-existence of Beanair WSN (IEEE 802.15.4) in the presence of interference.		
TN_RF_010 – « BeanDevice® Power Management »	All the BeanDevice®	This technical note describes the sleeping & active power mode on the BeanDevice [®] .		
TN_RF_009 – « BeanGateway ® management on LAN infrastructure »	BeanGateway ®	BeanGateway [®] integration on a LAN infrastructure		
TN_RF_008 – "Data acquisition modes available on the BeanDevice®"	All the BeanDevice®	Data acquisition modes available on the BeanDevice®		
TN_RF_007 – "BeanDevice® DataLogger User Guide"	All the BeanDevice®	This document presents the DataLogger feature on the BeanDevice®		
TN_RF_006 – "WSN Association process"	All the BeanDevice®	Description of the BeanDevice [®] network association		
RF_TN_003- "Aggregation capacity of wireless sensor networks"	All the products	Network capacity characterization of Beanair Wireless Sensor Networks		
RF_TN_002 V1.0 - Current consumption in active & sleeping mode	BeanDevice®	Current consumption estimation of the BeanDevice in active and sleeping mode		
RF_TN_001 V1.1- Wireless range benchmarking	BeanDevice®	Wireless range benchmarking of the BeanDevice®		

4.3 RELATED VIDEOS

All the videos are available on our YouTube channel

BeanAir video link (YouTube)	Related products
Company Presentation	All
BeanGateway [®] - Ethernet Outdoor version introduction	BeanGateway [®] - Ethernet Outdoor version introduction
BeanGateway [®] – Ethernet Indoor version presentation	BeanGateway [®] Ethernet Indoor version
BeanDevice [®] AN-XX wireless range demonstration	BeanDevice® AN-XX & BeanDevice® AN-XX Extender
BeanDevice [®] AN-XX presentation	BeanDevice [®] AN-XX & BeanDevice [®] AN-XX Extender
BeanDevice [®] AX-3D presentation	BeanDevice [®] AX-3D
BeanDevice [®] HI-INC presentation	BeanDevice [®] HI-INC
BeanDevice [®] AX-3DS presentation	BeanDevice [®] AX-3DS
BeanScape [®] – WSN supervision software	BeanScape®
BeanGateway [®] Ethernet/LAN Configuration, directly connected to the Laptop/PC	BeanGateway ®
Wireless sensors profile deletion from the BeanGateway [®] Database	All

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5. SYSTEM OVERVIEW



Figure 1: Overview of BeanScape® software

BeanScape[®] software is suitable for monitoring and configuring BeanAir wireless sensor networks. It is designed to provide a high level of flexibility and efficiency.

BeanScape[®] provides the following features:

- ✓ Monitoring wireless sensor networks.
- ✓ Displaying configured alarms of different wireless networks.
- ✓ Sensors calibration and configuration
- ✓ OTAC (Over-the-air-configuration)
- ✓ Data and diagnosis analysis through curves and statistics
- ✓ Ability to store measurements and diagnostic information in a database as a LOG file
- ✓ Tools for optimizing the installation of wireless sensor networks

5.1 DIFFERENT VERSIONS OF BEANSCAPE 2.4 GHZ SOFTWARE

The BeanScape[®] is a powerful software tool with client/server architecture. This implies that the network sensor communicates with the BeanScape[®] through a wireless coordinator called BeanGateway[®]. The BeanScape[®] acts as the server and the BeanGateway[®] acts as the client.

Beanair [®] network is comprised of a network coordinator (BeanGateway [®]) and wireless sensors (BeanDevice[®]).

Features	BeanScape EAGHZ MANAGER	BeanScape 24GHz BASIC			BeanScape 24GHz Multiview
Number of managed BeanDevice® 2.4GHz	35	35	Unlimited	Unlimited	Unlimited
Period technical assistance (e-mail)	1 month	1 year	1 year	1 year	1 year
OPC Server DA	No	No	No	Yes	Yes
Free of cost ?	Yes	No	No	No	No
Real time data base	Yes	Yes	Yes	Yes	Yes
GUI (Graphical User Interface)	No	Yes	Yes	Yes	Yes
Alarm notification by email	No	Yes	Yes	Yes	Yes
Streaming with Event- Trigger (S.E.T.) mode	No	Yes	Yes	Yes	Yes
NTP client	No	Yes	Yes	Yes	Yes
Real-Time FFT, Real-Time Velocity	No	No	Yes	Yes	Yes
Automatic Reports (Waveform , FFT, PPV, Velocity)	No	Only Waveform report	Yes	Yes	Yes
Multi-user access	No	No	No	No	Yes

Figure 2 : the different versions of BeanScape® software



BeanScape[®] manager is not provided with a real-time graph display.

See "Overview of our BeanScape Basic" YouTube video

5.2 ABOUT SYNCHRONOUS MULTICASTING

Synchronous multicasting is only available on the following BeanDevice®:

- BeanDevice[®] AX-3D
- BeanDevice[®] AX-3D Xrange
- BeanDevice[®] INC (not available on the Xtend version)
- BeanDevice[®] HI-INC (not available on the Xtend version)
- BeanDevice® HI-INC Xrange (not available on the Xtend version)
- BeanDevice[®] AN-V/AN-mV/AN-420



For more information about Synchronous Multicasting, please read the <u>Data acquisition mode</u> available on the BeanDevice[®] technical note

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6. HOW THE BEANSCAPE[®] LICENCE IS WORKING?

The BeanScape[®] license is related to the BeanGateway[®] device, i.e. user can install the BeanScape[®] on different PC and asynchronously connect it to the same BeanGateway[®].

If a new BeanGateway[®] is acquired, there will be two applications cases:

- The BeanGateway[®] works independently; a new BeanScape[®] Basic should be acquired.
- The BeanGateway[®] is connected to the same PC (multi-WSN management), BeanScape[®] Premium/Premium+/Multiview should be considered.

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7. HARDWARE & SOFTWARE COMPATIBILITY

7.1 COMPATIBLE OPERATING SYSTEMS

Operating Systems	Compatibility	Tested/Certified
Windows XP	Yes	Yes
Windows Vista	Yes	Yes
Windows 7 (32-bit)	Yes	Yes
Windows 7 (64-bit)	Yes	Yes
Windows 8 (32-bit/64-bit)	Yes	Yes
Windows 8.1 (32-bit/64-bit)	Yes	Yes

The BeanScape[®] is compatible with many operating systems:

Table 1: Compatible operating systems

The BeanScape software license is linked to the BeanGateway. Therefore, it can be installed on a different PC/Laptop.

7.2 RECOMMENDED MINIMUM CONFIGURATION

Operating Systems	BeanScape® Manager (Streaming mode not enabled)	BeanScape® Basic (Streaming mode not enabled)	BeanScape® Basic (Streaming mode enabled)	BeanScape® Premium+	BeanScape® Premium				
CPU	2.33GHz or faster x86-compatible processor								
RAM memory	1 GB	2 GB	4 GB						
Disk Space	5 GB	5 GB	10 GB						
Graphic card	128 MB	128 MB	1 GB						

Table 2: Recommended minimum configuration

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8. INSTALLING/UNINSTALLING YOUR BEANSCAPE® SOFTWARE

Installing the BeanScape[®] software is very easy:

- ✓ Double click on "setup.exe" file (shown below) to launch BeanScape[®]
- ✓ Follow the different stages of installation
- ✓ When installing the software, a location for the log files is requested. These files are used to store all the data coming from the Wireless Sensor Network (information about the Network diagnostic, data acquisition of different wireless sensors, network acknowledgment etc.).
- Click Finish to complete the installation of BeanScape[®].
- ✓ The installation is now complete; the **BeanScape®** shortcut icon is now available on your desktop.
- ✓ BeanScape requires administrator privilege level, to allow this once and for all:
 - Right click on your BeanScape icon and select properties
 - Go to Compatibility tab
 - Check on Run this program as an administrator and click Apply

		🗯 BeanScape 2.4G	ihz Properties		>
		Security General	Details Shortcut working correctly on	Previous Versions Compatibility this version of Windows.	
BeanScape	Create shortcu Delete Rename Properties	try running the com Run compatibilit How do I choose c Compatibility mod Run this progr Windows 8 Settings	patibility troubleshoot y troubleshooter ompatibility settings r e am in compatibility m	nanually? ode for:	
2.4012		8-bit (256) color Run in 640 x 4 Disable fullscr Run this progr Change hid	480 screen resolution een optimizations ram as an administrat nh DPI settinns	or 	

Figure 3: Run BeanScape as an Administrator

To uninstall BeanScape[®], go to settings then select the menu **Apps.** A list of installed applications will be displayed, go to BeanScape and select uninstall.



Figure 4: Uninstall BeanScape

9. START YOUR APPLICATION

For further information on LAN Network configuration:

• Read the following technical note: <u>TN RF 009 – « BeanGateway® management on LAN</u> <u>infrastructure »</u>



Related video: <u>BeanGateway® Ethernet/LAN Configuration, directly connected to the Laptop/PC</u>

9.1 ETHERNET CABLE CONNECTION



Figure 5: Typical LAN connection

To view the entire wireless sensor network from your *BeanScape*[®], you must firstly connect your *BeanGateway*[®] to a PC where the *BeanScape*[®] is installed. Connection is established through an Ethernet cable.

- ✓ Make sure the Ethernet cable is connected to both your PC and *BeanGateway*[®]
- ✓ Make sure your *BeanGateway*[®] is powered and in "ON" position.
- ✓ Make sure that your *BeanScape*[®] is installed on your PC

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9.2 CONFIGURING LAN SETTINGS ON YOUR PC/LAPTOP

To configure the network on your computer/workstation (Windows 10):

1. Click on Settings



	Windows Settings									
				Find a set	tting		0			
口	System Display, sound, notifications, power		Devices Bluetooth, printers, mouse	[]	Phone Link your Android, iPhone		Network & Internet Wi-Fi, airplane mode, VPN	Ą	Personalization Background, lock screen, colors
	Apps Uninstall, defaults, optional features	8	Accounts Your accounts, email, sync, work, family	A) 字	Time & Language Speech, region, date	\bigotimes	Gaming Game bar, DVR, broadcasting, Game Mode	¢,	Ease of Access Narrator, magnifier, high contrast
A	Privacy Location, camera	\mathbb{C}	Update & Security Windows Update, recovery, backup	كر	С	Search Language, permissions, history				

Figure 7: Windows 10 control panel



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3. Click on Network and Internet then Change adapter options

÷	Settings	
ŵ	Home	Status
F	ind a setting \wp	Network status
Ne	twork & Internet	$\Box = \epsilon = \Phi$
₿	Status	BeanairWilow Public network
ſ.	Wi-Fi	You're connected to the Internet
탚	Ethernet	If you have a limited data plan, you can make this network a metered connection or change other properties.
¢:	Dial-up	Change connection properties
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	VPN	Show available networks
\$	Airplane mode	Change your network settings
((j))	Mobile hotspot	Change adapter ptions View network adapters and change connection settings.
Ċ	Data usage	Sharing options For the networks you connect to, decide what you want to share.
⊕	Proxy	
		Network troubleshooter Diagnose and fix network problems.
		View your network properties
		Windows Firewall
		Network and Sharing Center

#### Figure 8: Network status window

# 4. Select the Ethernet socket connected to your BeanGateway®



Figure 9: Ethernet adapter

5. Right-click then select Properties:



Figure 10: Ethernet adapter options

6. Ethernet Properties Window will open, select "Internet Protocol Version 4 (TCPv4)" then click OK

📱 Ethernet Properties 🛛 🗙
Networking Sharing
Connect using:
PRealtek PCIe GBE Family Controller
Configure
This connection uses the following items:
<ul> <li>Client for Microsoft Networks</li> <li>File and Printer Sharing for Microsoft Networks</li> <li>QoS Packet Scheduler</li> <li>Internet Protocol Version 4 (TCP/IPv4)</li> <li>Microsoft Network Adapter Multiplexor Protocol</li> <li>Microsoft LLDP Protocol Driver</li> <li>Internet Protocol Version 6 (TCP/IPv6)</li> </ul>
Install Uninstall Properties
Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
OK Cancel

Figure 11: Ethernet IP Proprieties

7. If your DHCP is enabled (BeanGateway[®] is connected to an Ethernet Router), make sure that the option Obtain an IP address automatically is selected

BeanScape [®] 2.4GHz User Manu	ıal		2.4GHz wireless sensors
Ir	ternet Protocol Version 4 (TCP/IPv4	) Properties	×
	General Alternate Configuration		
	You can get IP settings assigned auto this capability. Otherwise, you need t for the appropriate IP settings.	matically if your network supports o ask your network administrator	
	Obtain an IP address automatica	illy	
	OUse the following IP address:		
	IP address:		
	Subnet mask:		
	Default gateway:		
	Obtain DNS server address auto	matically	
	OUse the following DNS server ad	dresses:	
	Preferred DNS server:		
	Alternate DNS server:		
	Validate settings upon exit	Advanced	
		OK Cancel	
	Figure 12: IP se	ttinas window	

8. If the DHCP option is not enabled, you should enter a static IP **192.168.4.2** on your PC with a subnet mask: **255.255.255.0** Click "OK" to confirm and safeguard your work.

Internet Protocol Version 4 (TCP/IPv4) Properties						
General						
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.						
Obtain an IP address automatical	у					
• Use the following IP address:						
IP address:	192.168.4.2					
Subnet mask:	255 . 255 . 255 . 0					
Default gateway:						
Obtain DNS server address automatically						
• Use the following DNS server addresses:						
Preferred DNS server:						
Alternate DNS server:	• • •					
Validate settings upon exit	Advanced					
	OK Cancel					

Figure 13: IP settings

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Your computer is now connected to your wireless sensor networks. In order, facilitate these exchanges you must give commands from BeanScape[®].

To have an overview on IP address and the network status of your computer, click on the computer icon on the bottom of the windows taskbar



On the displayed menu select the profile of your ethernet connection then select again the ethernet profile on the new window that will be opened to show your network information.



Figure 14: LAN connection icons

IPv4 address:	192.168.4.2
Manufacturer:	Realtek
Description:	Realtek PCIe GBE Family Controller
Driver version:	9.1.406.2015
Physical address (MAC):	C8-1F-66-40-BC-E0
Сору	

#### Figure 15: LAN information

By default, the BeanGateway[®] IP address is set at 192.168.4.123 with the DHCP disabled. The BeanGateway is considered as a client by the BeanScape [®] (server) having the IP address by default set to 192.168.4.2.

# 9.3 FIREWALL COMPATIBILITY

Some firewalls will not permit applications such as BeanScape[®] (or any applications you have not specifically allowed) to access your BeanGateway[®]. Generally, the first time the BeanScape[®] or another application tries to access the BeanGateway[®], you will be asked if you would like to allow that application access. If you accidentally clicked **No** on that message (or if your firewall never asked for permission to allow the BeanScape[®] access), you will not be able to use the BeanScape[®] until you configure your firewall to allow BeanScape[®] to access your BeanGateway[®].

With most firewalls, this is easy to do. Keep in mind that all firewalls are a bit different, but the process is usually as follows:

- 1. Make sure that your BeanScape[®] is not running;
- 2. Open your firewall. If you cannot find your firewall application, check the System Tray (at the bottom-right corner of the screen) for an icon. Usually, you can right-click this icon and select to open the firewall;
- 3. Your firewall maintains a list of applications installed on your computer (usually under a heading like Settings or Program Control). In this list, locate the entry for BeanScape[®];
- 4. Configure the BeanScape[®] entry to allow it to connect to the BeanGateway[®];
- 5. Save your modifications;
- 6. Restart the BeanScape[®] software

If you are not familiar to configure a firewall exception, you can directly from BeanScape[®] add this rule automatically.

On the BeanScape[®] menu select Tools, then Advanced Settings then click on validate to add BeanScape[®] to the Firewall.

BeanScape [®] 2.4GHz User Manual	2.4GHz wireless sensors
📸 Beanscape 2.4GHz	
File BeanScape® App Tools Off.Data Analysis View Help	
Serve Serve Serve MA BeanScape® configuration Alarm Window BeanGateway Ethernet/LAN Config. Import/Export user settings Alarm Management Notification Management Offline graph Advanced Settings BeanScape © configuration	
FTP Configuration Advanced Setting	js x
OPC Management	
The second state of the second state	

# Figure 16: Firewall auto exception

# 9.4 START THE BEANSCAPE®

To start BeanScape[®], please follow the instructions:

- Start BeanScape [®]by double-clicking the icon
- You get the following screen:



🛥 Beanscape	e 2.4GHz		- 0 >	×
File Bean	Scape® App Tools Off.Data Analysis View Help			
	Server Started			
•				
à.				
<b>F</b>				
<b>.</b>				
	Component List			
Î	Access to different sites			

Figure 17: BeanScape main window



**Beanair GmbH** 



#### 2.4GHz wireless sensors

# Step 3: BeanGateway[®] Profile Transmission

The *BeanGateway*[®] profile is retained on its flash memory. This profile contains are the informations about the BeanGateway[®] ID (NWK Add, PAN ID, MAC ID, IP...), versions ID (Hardware, embedded software, stack...), Radio Management parameters (Radio channel, TX Power, ....)
The *BeanGateway[®]* profile is transmitted to the BeanScape[®]



# Step 4: WSN Mapping transmission

• The WSN mapping concerns all the Beandevice[®] profile. The WSN mapping is backuped on the BeanGateway[®] flash memory. When a new BeanDevice[®] joins a WSN, its profile is transmitted to the BeanGateway[®] and the BeanScape[®].

- The BeanScape[®] displays the WSN Mapping with the BeanDevice[®] profile;
- WSN Mapping is backuped on the BeanScape[®] Database.



#### 9.6 CONFIGURING THE LAN ON YOUR BEANGATEWAY®

Click on the following weblink to see the video: <u>BeanGateway® Ethernet/LAN Configuration, directly</u> <u>connected to the Laptop/PC</u>



Please check your Network settings before you make any changes.

By default, the BeanGateway[®] is configured with a static IP address: **192.168.4.123**. This allows the user to quickly connect the BeanGateway[®] to a PC.

If you want to set the BeanGateway[®] IP on your business network and get a dynamic IP address (via DHCP), you can configure the BeanGateway[®] via a serial port or via the Ethernet.

Go on your BeanGateway® profile and click on Tools | BeanGateway Ethernet/LAN Config.



Figure 20: BeanGateway configuration menu

A new window will open called "BeanGateway® configuration"



Figure 21: BeanGateway configuration window on BeanScape

✓ DHCP Enabled: Check this case if you want to enable the DHCP. For further information about DHCP read the Technical Note "BeanGateway® management on your Local Area Network infrastructure".

#### ✓ If DHCP is not activated, the user must configure the BeanGateway[®] IP parameters:

- *IP Address:* BeanGateway IP Address. The BeanGateway[®] IP address should have the following form: "X.Y.Z.B". With A, B, X, Y and Z numbers between 0 and 255
- Subnet Network mask: The subnet mask is set to "255.255.255.0" by default
- o Gateway IP Address: Subnet network mask
- ✓ DNS Enabled: Check this case if you want to enable the DNS. For further information about DNS read the Technical Note "BeanGateway® management on your Local Area Network infrastructure".
- ✓ The gateway IP address subnet is the default "X.Y.Z.1"
- ✓ Port: By default, the communication port used is «5313". This port is generally free, if not choose another Socket Port.

For further information, please read the following technical note – <u>TN_RF_009 – « BeanGateway</u>® <u>management on LAN infrastructure »</u>

### 9.7 DEVICE PROFILE

### 9.7.1 BeanGateway[®] profile
The BeanGateway[®] is identified by its PAN ID and is located on the lower left window.





✓ You will see the following window:

Beanscap	e 2.4GHz Inection Tools BeanGateway View Help	
	Connection Started The MAC_ID: 0 + 00158D00000E0EAB COLVENTION	BeanGateway system profile         Radio Configuration           Mac Id:         0015800000005863.0         Radio Channel :         20           Ste ID:         Ste : 0 x 391A         Used RF channels :         11-28         Status area
	G,Z     MAC,D: 0, 00158000000E0688     G,X     G,Y     MAC,D: 0, 00158000000E0688     G,X     G,Y     MAC,D: 0, 0015800000E0886     G,Y     G,Y     G,Z     MAC,D: 0, 0015800000E0A2E     G,Y     G,X     G,X     G,Y     G,Y     G,X     G,Y     G,Y	Pan Id:       5914         Net Id:       6000         Version       Diag. Date:       1/26/26/21 44/3312 PM         Hard, vers.       V3R4         Soft, vers.       V5R8         Battery Voltage:       4.198         Battery level:       6cod         Voltage:       Ethernet Modbus         Soft. Vers.       V5R1
The second se	Oi, I. Andert           Oi, T. Andert           Oi, T. Soly, ID           M. C., Di oi: 0015500000E0038           Oi, T. Soly, ID           M. M. Z., Di oi: 0015500000E1049           M. A., Di Oi: 0015500000E1049           Oi, Y.           Oi, Z.	Stet Labelling         Notes         Radio Config         System Config         Multicasting         Madbus         Upload device profile           Enneral         Sinial         Sinial
	Component List Sort Access to different sites Size :0x 391A	TCP     RS 485       Part:     582       Rx timeout:     5888 ms       Configuration       Start     Config       Assistant     MacId Table

Figure 23: BeanGateway Profile on BeanScape

For further information about the BeanGateway®, please read the BeanGateway® user manual.

#### 9.7.2 BeanDevice® profile

Click on the BeanDevice[®] folder tree on the left side pane, you will obtain all the information about your BeanDevice[®] connected to your network.

Server	
MAC_ID : 0 x 00158D00000E06BB	Started 🦲
MAC_ID : 0 × 00158D00000E0986 MAC_ID : 0 × 00158D00000E0C37 MAC_ID : 0 × 00158D00000E0C4D MAC_ID : 0 × 00158D00000E0F90 MAC_ID : 0 × 00158D00000E0F90	<ul> <li>MAC_ID: 0 × 00158D00000E06BB</li> <li>MAC_ID: 0 × 00158D00000E0986</li> <li>MAC_ID: 0 × 00158D00000E0C37</li> <li>MAC_ID: 0 × 00158D00000E0C4D</li> <li>MAC_ID: 0 × 00158D00000E0F90</li> </ul>

Figure 24: BeanDevices profiles

You can Rename, restart or remove the BeanDevice[®] quickly by using the right button of your mouse, without using the advanced options.



Figure 25: Right click on BeanDevice profiles

For further information about your BeanDevice®, please read the BeanDevice® user manual.

# **10. SYSTEM CONFIGURATION (FOR ADVANCED USER ONLY)**



# The following procedure applies only for advanced users

Click on the tab Tools then BeanScape configuration to configure advanced settings in *BeanScape®*:



Figure 26: BeanScape Configuration menu

This window lets you configure the logs, data cache and Ethernet/LAN link between the BeanDevice[®] and the BeanGateway[®].

✓ A second window will appear:

BeanScape Configuration		×
Log		
Keep Alive App	Log directory :	C:\log_beanscape
	Stop loggin when disc space is	2048 <b>♀</b> MB
-	Main Log filename :	
System	Main log max. size :	200 🔶
Data cache	Sensor Log enabled :	✓
Data Logger	Sensor log max. size (KB) :	1024 🗲
StartUp	Network log info. enabled :	✓
Date and Time Format	Network info log max. size (KB) :	1024 🗢
,	BGw Module Log enabled :	✓
Language	BGw Module log max. size (KB) :	1024 🜩
	Syst. Maint. Status Log enabled :	✓
	Syst. Maint. Status log max size (KB) :	1024 🗲
	Log file generation	All sensor channels in one file
		○ _{Separated}
	Streaming log max. size (KB) :	2048 🗲
	Reload Apply	Save Reset





Configure the TCP port number, by default to 5313 in order to listen.

# **10.2 KEEP ALIVE APPLICATION**

BeanScape Configuration	×
Log	
Keep Alive App	Keep Alive App enabled : 🗹
TCP/UDP	KAA interval (ms) : 4000 🗢
System	Max. retry nbr : 7 🗲

### Figure 29: Keep alive tab

Three parameters related to keepalive are available:

- Keep alive timeout is the duration between two keep alive transmissions in idle condition. TCP keepalive period is required to be configurable and by default is set to no less than 2 hours.
- Keep alive interval is the duration between two successive keep alive retransmissions, if acknowledgement to the previous keep alive transmission is not received.
- Max retry is the number of retransmissions to be carried out before declaring that remote end is not available.

Keepalive packet contains null data. In a TCP/IP over Ethernet network, a keepalive frame is of 60 bytes, while acknowledge to this also null data frame and is of 54 bytes.

# **10.3 BEANGATEWAY® CONFIGURATION VIA UDP**

BeanScape Configuration	x
Log	
eep Alive App CP/UDP	BeanGateway configuration via Udp :
TCP/UDP	Udp port : 53130 🗢
System	Tcp port to listen : 5313 😴
Data cache	
Data Logger	UDP Server Config
StartUp	UDP Server : 127.0.0.1
Data cache Data Logger StartUp	UDP Server Config UDP Server : 127.0.0.1

# Figure 30: TCP/UDP tab

Configure the UDP port number, by default to 53130 in order to listen.

# **10.4 LANGUAGE CONFIGURATION**

Log	Current Language : Automatic(System Language)
Keep Alive App	
TCP/UDP	Language : Automatic(System Language) ~
,	Automatic(System Language)
System	English
Data cache	French
	German
Data Logger	Japanese
с	Chinese
StartUp	Polish
Date and Time Format	
Language	

Figure 31: Language configuration

- ✓ Auto: The BeanScape[®] will use the OS language by default
- ✓ *English*: select English language
- ✓ *French*: select French language
- ✓ Japanese: Select Japanese language



- Wilow[®] graph
- Max number of diagnostics: Set here the maximum number of diagnostics displayed on the BeanScape[®]
   Wilow[®] graph

System

Keep Alive App

Data cache

TCP/UDP

Data Logger

Gravity

Log

Figure 34: G value configuration

Max number of alarms: Set here the maximum number of alarms displayed on the BeanScape Wilow®

Maximum streaming points: Set here the maximum number of points displayed in Streaming on the . BeanScape® Wilow® graph

Please note that the values backed up by the BeanScape® may affect the memory capacity of your

computer depending upon the size of every file.

# 10.7 G VALUE

Because there are slight variations in the G value about earth's surface within the value of G dependent upon location, user have the possibility to set the corresponding G value from BeanScape Configuration option.

9806.65

g value

BeanScape Configuration



2.4GHz wireless sensors

mm/s²

11. EXPORT/IMPORT USER SETTINGS (FOR ADVANCED USER ONLY) **11.1 CUSTOM USER CONFIGURATION** 11.1.1 Export Function Click on the tab *Tools* then "*Export/Import user settings*" 📾 Beanscape 2.4GHz BeanScape® App Off.Data Analysis File Tools Advanced func. BeanScape® configuration Serve Alarm Window BeanGateway Ethernet/LAN Config. Import/Export user settings Alarm Management Figure 35: Export/Import user settings menu A new window will appear, which contains the Custom User Configuration and the BeanScape Configuration, Custom User Configuration represent the settings that have relationship with the BeanGateway and the • BeanDevices. BeanScape Configuration is related to BeanScape settings. Under Custom User Configuration click on *Export*: Import/Export x Custom User Configuration Merge Replace Export Clear **BeanScape Configuration** Import Export Reset Figure 36: Custom user configuration window User configuration is exported in XML format:

BeanScape[®] 2.4GHz User Manual

2.4GHz wireless sensors

BeanScape [®]	2.4GHz	User	Manual
------------------------	--------	------	--------

💞 Save As							×
$\leftarrow$ $\rightarrow$ $\checkmark$ $\bigstar$	> This	PC > Documents		~ Ō	Search Docur	ments	9
Organize 👻 New		== -	?				
henrik	^	Name	Date mod	lified	Туре	Size	
JANV		Custom Office Templates	1/2/2019	10:03	File folder		
Weekly Report							
a OneDrive							
💻 This PC							
 3D Objects							
Desktop							
🔮 Documents							
🕂 Downloads							
b Music	~						
File name:	BeanUs	erCustomDB.xml					~
Save as type:							~
<ul> <li>Hide Folders</li> </ul>					Save	Cance	el

### Figure 37: User export

C:\Users\GraphicDesigner\Desktop\BeanUserCustomDB..xml - Sublime Text (UNREGISTERED)

File E	dit Selection	n Find	View	Goto	Tools	Project	Preferences	Help
<b>∢</b> ►	BeanUserC	ustomDB	lxml >	۲				
	xml</th <th>versi</th> <th>on="1</th> <th>.0" s</th> <th>tandal</th> <th>Lone="y</th> <th>yes"?&gt;</th> <th></th>	versi	on="1	.0" s	tandal	Lone="y	yes"?>	
	<beans< th=""><th></th><th></th><th></th><th>ngs xr</th><th>nlns=" </th><th>BeanUserCu</th><th>ustomDB"&gt;</th></beans<>				ngs xr	nlns="	BeanUserCu	ustomDB">
	<sit< th=""><th>e&gt;</th><th></th><th></th><th></th><th></th><th></th><th></th></sit<>	e>						
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	<m></m>		>00158	3D000	00E070	D <th></th> <th></th>		
	<5	ITE_LI	BL>PAI	V_ID	:0x	070D<,	SITE_LBL:	>
	<5	ITE_R	EF>SI	TE_RE	F <th>re_ref:</th> <th>&gt;</th> <th></th>	re_ref:	>	
	<5	ITE_T	YPE>SI	ITE_T	YPE </th <th>SITE_T</th> <th>YPE&gt;</th> <th></th>	SITE_T	YPE>	
	<5	ITE_C	OMMENT	rs />				
10	<th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>							
11	<pla< th=""><th>tform</th><th>&gt;</th><th></th><th></th><th></th><th></th><th></th></pla<>	tform	>					
12	<p< th=""><th>AN_ID</th><th>&gt;070D&lt;</th><th><th>_ID&gt;</th><th></th><th></th><th></th></th></p<>	AN_ID	>070D<	<th>_ID&gt;</th> <th></th> <th></th> <th></th>	_ID>			
13	<m></m>	AC_ID	>00158	3D000	90E0CI	-6 <th>C_ID&gt;</th> <th></th>	C_ID>	
14	<p< th=""><th>LATFO</th><th>RM_LBI</th><th>L&gt;MAC</th><th>_1D :</th><th>0 x 0</th><th>0158D00000</th><th>0E0CE6</th></p<>	LATFO	RM_LBI	L>MAC	_1D :	0 x 0	0158D00000	0E0CE6
15	<p< th=""><th>LATFO</th><th>RM_REF</th><th>-&gt;PLA</th><th>TFORM_</th><th>_REF<!--</th--><th>PLATFORM_H</th><th></th></th></p<>	LATFO	RM_REF	->PLA	TFORM_	_REF </th <th>PLATFORM_H</th> <th></th>	PLATFORM_H	
16	<p< th=""><th></th><th></th><th>PESPL</th><th>ATFORM</th><th>1_TYPE</th><th><th>M_TYPE&gt;</th></th></p<>			PESPL	ATFORM	1_TYPE	<th>M_TYPE&gt;</th>	M_TYPE>
1/	4>			LDEK_	NAME>	-older	OCE6 <th>ATFORM_FOLDER_NAME&gt;</th>	ATFORM_FOLDER_NAME>
10	< F		AL I IMI	=>tal	se	-I_KEAI	LIIME>	
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21			JFILE.	12021	2 <th></th> <th>LLE&gt;</th> <th></th>		LLE>	
22		FI_VE			FFI_VI			MANUTALS
27		ГТ_VL СТ ШТІ					I_VECTOR_I	hanual?
24				- IF LZ	/EET /	L COBT.	THMS	
	27			Steu	02/7FF		OTNGN	
20	<		EET	Falco				
27	214		om Ror	nort	falco		Form Renou	et \
29	2	Wavef	nem la	ogRvF	mail	false	/ Wavefor	rm LogBvFmail >
30	~	Set TI	hresh	oldTv	ne >04	/ Set	Threshold	dTvne >
31	, T	TRETL	TER>fa	alsek	/TTRF	LTER>		
32	<v< th=""><th>ELOCT</th><th>TY REA</th><th>ALTIM</th><th>&gt;fal</th><th>se<th>LOCITY REA</th><th>ALTIME&gt;</th></th></v<>	ELOCT	TY REA	ALTIM	>fal	se <th>LOCITY REA</th> <th>ALTIME&gt;</th>	LOCITY REA	ALTIME>
33	<۷	ELOCI	TY DI	N REP	ORT>fa	alse </th <th>VELOCITY [</th> <th>DIN REPORT&gt;</th>	VELOCITY [	DIN REPORT>
34	<v< th=""><th>ELOCI</th><th>TY LO</th><th>GFILE</th><th>&gt;false</th><th>e<th>DCITY LOG</th><th>FILE&gt;</th></th></v<>	ELOCI	TY LO	GFILE	>false	e <th>DCITY LOG</th> <th>FILE&gt;</th>	DCITY LOG	FILE>
	<p< th=""><th></th><th>GFILE</th><th>&gt;fals</th><th>e<th></th><th>ILE&gt;</th><th></th></th></p<>		GFILE	>fals	e <th></th> <th>ILE&gt;</th> <th></th>		ILE>	

Figure 38: Custom_DB example

### **11.1.2 Import Function**

Click on *Replace* to import user configuration, by choosing replace function the old Custom_DB will be replaced with the new one.

BeanScape [®] 2.4GHz User Manual	2.4GHz wireless sensors
Import/Export	×
Replace Merge Export	Clear
BeanScape Configuration	
Import Export Reset	
Figure 39: Custom user configuration wir	ndow

By choosing *Merge* function the old Custom_DB will be merged with the new one.

Import/Export ×
Custom User Configuration
Replace Merge Export Clear
BeanScape Configuration
Import Export Reset

Figure 40: Custom user configuration (merge)

Click on **Clear** to clear the Custom_DB.



# **11.2 BEANSCPAE CONFIGURATION**

# 11.2.1 Export Function

Click on *Export* to export BeanScape configuration

BeanScape [®] 2.4	GHz User Manual			2	.4GHz wire	less senso	rs	
	Import/Export Custom User Configuration Replace BeanScape Configuration Import Ecircure 44. Exe	Merge Export	Export Reset	Clea	ar			
BeanScape config	guration is exported in XML fo	ormat:	<u>Jor Beanscape</u>	<u>Conjig</u>				×
← → × ↑ □ > Th	is PC → Desktop				✓ [™] Sea	rch Desktop		م
Organize 🔻 New folde	er					E	-	?
seif ^	Name	Date modified	Type 🗸 S	ize				^
OneDrive	🛋 image_2020_02_24T15_45_14_565Z	2/24/2020 4:48 PM	PNG File	120 KB				
This PC	BeanScape_Configuration	2/24/2020 4:48 PM	XML Document	8 KB				
3D Objects	App & Layout	2/24/2020 4:39 PM	Adobe Acrobat D	976 KB				- 11
Desktop	BeanUserCustomDB.	2/24/2020 12:13 PM	XML Document	2 KB				
Documents	Weekly-Report	2/21/2020 2:35 AM	Microsoft Word D	143 KB				
Downloads	Weekly-Report	2/21/2020 2:34 AM	Adobe Acrobat D	82 KB				
Muric	WM-RF-01-ENG-SmartSensor-wireless-ac	2/21/2020 2:22 AM	Microsoft Word D	34,797 KB				
Distures	B UM-RF-01-ENG-SmartSensor-wireless-ac	2/21/2020 2:22 AM	Adobe Acrobat D	13,855 KB				
Pictures	👜 UM-RF-07-ENG-Wilow-Wifi-Sensor V2.6	2/21/2020 2:14 AM	Microsoft Word D	47,860 KB				
Videos	UM-RF-07-ENG-Wilow-Wifi-Sensor	2/21/2020 2:13 AM	Adobe Acrobat D	14,378 KB				
Windows (C:)	Modbus Report	2/21/2020 1:27 AM	Microsoft Word D	1,797 KB				~
File name: Beans	Scape_Configuration.xml							~
Save as type:								~
∧ Hide Folders					Г	Save	Cancel	
11.2.2 Jm	<u>Figure 42:</u>	BeanScape (	<u>Config exporta</u>	<u>tion</u>				
±±+2+2 111								
Click on <i>Import</i> to	o import BeanScape configura	ition						

BeanScape [®] 2.4GHz User Manual	2.4GHz wireless sensors
Import/Export	x
Custom User Configuration	
Replace Merge Export	Clear
BeanScape Configuration	
Import Export Reset	

Figure 43: Import function for BeanScape Config

Click on **Reset** to reset the BeanScape configuration.

# **12. ADVANCED SETTINGS**

Navigate to Tools and click on Advanced settings.



Figure 44: Advanced Settings option

A new window will pop up in which user can find several settings

Advanced Settings	
Firewall	
Add	
Sql Server Report	
Check	Install
Matlab Functions	
Check	Download
Figure 45: Se	ettinas Options

### 12.1 FIREWALL

Click on **Add** button in order to add BeanScape on firewall, with that user will be sure that the firewall will not interrupt the connection between BeanScape software and the BeanGateway.

BeanScape [®] 2.4GHz User Manu	al	2.4GHz wireless sensors
	Frand	I.
	Firewali	
	Add	
	Figure 46: Add BeanScape to Firewall	•

Right after clicking on Add a notification message will be displayed on the screen saying that BeanScape was added to firewall successfully.

Add BeanScape To Firewall	×
BeanScape added To Firewall	
ОК	
Figure 47: Notification mes	sage

## **12.2 MATLAB FUNCTIONS**

In this section user can check if MATLAB is installed with BeanScape software otherwise he has the possibility to download it.

Click on **Check** to check if the MATLAB function is installed or not.



### **12.3 SQL SERVER REPORT**

Click on Check to check if the SQL	Server was installed on your PC.
	Sql Server Report
	Check Install
	Figure 50: SQL Server installation

If the SQL Server is installed a pop-up notification will be displayed on the PC screen saying that the SQL Server is already installed.

🕅 🖣 1 🛛 of	1 ▶ ▶  ∉ ⊛	) 🚯   🏟 🔲	Al 🔍 - 🗌	
Test Sql Report	Test Sql Report			
OK	OK			
	1			

If it is not the case just click on Install button to install it.

Sql Server Report	
Check	Install

Figure 52: SQL Server Report Installation

 $\sim$ 

# **13. BEANSCAPE® MULTIVIEW**

BeanScape[®] Multiview version offers a multi-user interface. It enables real time remote access from a BeanScape[®] Client to the network configuration performed on BeanScape Server.

This new version of BeanScape software can be installed in two PCs, configured as a server in one of them and configured as Client in the other.

The BeanGateway must be connected with an Ethernet cable (directly or via a switch) to the PC where BeanScape is configured as Server.

## 13.1 SET BEANSCAPE® ON SERVER OR CLIENT

- Go to tools-> BeanScape Configuration
- Go to the tab: Enable/Disable BeanScape Client

🐝 ReanScane Client Management

Check or Uncheck IsBSCClient

beanscape enerit manageme	
• Server mode	○ Client mode
Allow BeanScape Client	to
Send configuration to Bear	Device
Change Online Data analysi	is configuration
🔲 Use Offline Data analysis	
Server Authentication	
Serial key 🖉 🖉 Vali	date
Save Re:	set Close

#### Figure 53: BeanScape Enable/Disable Client tab

• Check Allow BeanScape[®] Client to send OTAC to activate this option.

You must restart BeanScape® after configuring it as a Client.

# **13.2 LOCALIZE BEANCAPE® SERVER**

After restarting BeanScape the new configuration will take place and you will figure out that the Server menu become Client.

• Go to tools and click on Localize BSC srv to localize the BeanScape[®] server that you like to connect to.



The following window will appear.

- In Ethernet Config, select the IPv4 address of the PC where the BeanScape Client is installed.
- Click Localize
- Select the IP address which corresponds to BeanScape Server
- Click validate
- Go to Client and click on Start Client



Figure 55: Start Client option

# **13.3 BEANSCAPE® SERVER**

The user has access to all the profile details of the BeanDevice and the BeanGateway as well as all the configuration tabs of the BeanDevice (data acquisition configuration, Datalogger, power mode management...) and of the BeanGateway (Radio Config, System Config, Modbus, Multicasting...).

Localize BeanScape S	Server	-		×
Ethernet config				
192.168.1.69	~		Localize	•
192.168.1.133				$\sim$
			Validate	•

#### 13.3.1 BeanDevice® profile



Figure 56: BeanScape Server overview

#### 13.3.2 BeanGateway[®] profile



Figure 57: BeanGateway profile

### **13.4 BEANSCAPE® CLIENT**

The BeanScape[®] configured as Client gives access only to the profile details of the BeanDevice and the BeanGateway[®].

To allow to the Client to change the configuration and to send OTACs you must Enable this option on BeanScape[®] Configuration.



## 13.4.1 BeanDevice[®] profile on BeanScape[®] Client

The BeanDevices[®] will be shown in the same way like on BeanScape[®] server, but in this case all the configuration option will be disactivated if not allowed to the client.

Beanscape 2.46Hz iile Client Tools Advanced func. Off.Data Analysis Vie	w Help		
🕗 Client	BeanDevice system profile		
Stopped	Identity N	etwork Diagnostic	System
Stopped	Mac Id:         00150000000000000000000000000000000000	etwork quality: PER: 0.00 % ower Supply Diagnostic Diag. Date: 11/17/2021 11:30:45 AM ternal Temp.: 28.125 °C Power supply: Mains isation ×	Diagnostic cycle: 00:00:50 hh:mm:ss Listening cycle: 00:00:05 hh:mm:ss Sensor Info Meas.Range: -2/+2 g Cut off frequency: 1000 (Hz)
	Datalogger The Status: Ready BeanDevice Remote Config. Stu Pending Sent Deleted	sending otac is not allowed OK Datalogger System conf	Mernory used: 0 (%) Ig. Power Mode config. Online Data Analysis
	Digment data aca mada	Custom display Notes	Data Acq. config. Sensor Config
	DAD Statue : Stonned	Data acquisition mode configuration	
	Data Aco, mode: NA	Uata Acq. mode: Streaming	V Start
	Data Acq. cycle : NA ddd,hh:m	m:ss Sampling Rate: ta	
	Sampling rate : NA (Hz)	Data tas duration	
	Data Acq. duration : NA ddd,hh:m	m:ss	
		Data acquicition mode entires	
Sort	Tx Log	Tr Only     Tr Only     Tr Only	
Site : 0 x 00AF			

Figure 59: Limited Access in BeanScape Client

# 13.4.2 BeanGateway® profile on BeanScape® Client

The access to the BeanGateway options will be limited from a BeanScape Client.

Figure 60: BeanGateway limited access on BeanScape Client

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# **14. APPENDIX**

### 14.1 APPENDIX 1: CREATING A REMOTE ACCESS WITH BEANSCAPE® MULTIVIEW

### 14.1.1 VPN Server Configuration

On the server side, hosting the BeanScape[®] Multiview, you should setup a VPN server, which let the distant Client localize it remotely.

To configure an Incoming VPN connection, please follow the next steps.

### 14.1.1.1 VPN Server

- 1) Open Control Panel.
- 2) Click on Network and Sharing Center.
- 3) Using the left pane, click the Change adapter settings link.



### 4)

On "Network Connections," open the File menu pressing the Alt key, and select the New Incoming Connection option.

5) Check the users you want to VPN access to your computer and click the Next button.



6) Check the users you want to VPN access to your computer and click the Next button.

			_		$\times$
÷	Allow connections to this computer				
	Who may connect to this computer?				
	who may connect to this computer:				
	Select the check box next to a name to allow that person access to network.	this compute	er and		
	User accounts on this computer:				
	🗆 🔝 Administrator	^			
	🗆 🔝 BeanairRD				
	🗆 🔝 DefaultAccount				
	🗹 🔝 Guest				
	OPCUser1 (OPCUser1)				
	WDAGUtilityAccount	~			
	Add someone Account Prope	erties			
			Next	Can	cel

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7) Alternatively, you can click the Add someone button to create a new VPN user:

		×			
User name:	I		1		
Full name:			cess to this comp	outer and	
Password:					
Confirm password:					
	OK	Cancel		^	
	m				
🗹 🕵 Guest					
OPCUser1 (OI	PCUser1)				
	ccount			~	
	ne	Acco	unt Properties		
Add someor					
Add someor					

- 8) Check the Through the Internet option.
- 9) Click the Next button.

BeanScape [®] 2.4GHz User Manual	2.4GHz wireless sensors
	- 🗆 ×
<ul> <li>Allow connections to this computer</li> </ul>	
How will people connect?	
Another computer can connect to this one using a virtual private netw	vork (VPN)
connection.	
	Next Cancel

10) In the networking software page, select Internet Protocol Version 4 (TCP/IPv4) option.

11) Click the Properties button.

			- E
👰 Allow connections t	o this computer		
N			
Networking softw	are allows this com	puter to accept c	onnections from othe
kinds of computer	S		
Select the check box ne incoming connections.	xt to each type of networl	king software that sho	ould be enabled for
Networking software			
Internet Protoco	Version 4 (TCP/IPv4)		
L T Internet Protoco	Version 6 (TCP/IPv6)		
File and Printer	Sharing for Microsoft Net	works	
🗹 🚚 QoS Packet Sch	eduler		
	Install	Uninstall	Properties
Description:			
Transmission Control P	rotocol/Internet Protocol.	The default wide area	a network protocol
that provides commun	ication across diverse inte	rconnected networks.	y or excellent of the second

12) Under "IP address assignment," click Specify IP addresses, and specify <u>the number of clients allowed to</u> <u>access using a VPN connection</u>. (You will do this by specifying an IP address range, and it's recommended that you use high-order range of IP addresses to help avoid conflicts in the network with the IPs distributed by your router.

Incoming IP Properties	×	
Network access	cess my local area network	
IP address assignment		
O Assign IP addresse	es automatically using DHCP	
Specify IP address	;es	
From:	10 . 1 . 1 200	
To:	10 . 1 . 1 202	
Total:	3	
Allow calling compu	uter to specify its own IP address	
	ОК	Cancel

- 13) Click the OK button.
- 14) Click the Allow access button.
- 15) Click the Close button to complete setting up the VPN server on Windows 10.
- 16) Enable "Allowing calling computer to specify its own IP address"

		×
Allow connections to this computer		
The people you chose can now connect to this computer		
To connect, they will need the following information:		
Computer name: DESKTOP-5AV1KC7		
Print this information		
	<u>C</u> le	ose

### 14.1.1.2 Firewall Configuration

- 1) Open Start.
- 2) Search for Allow an app through Windows Firewall and click the top result to open the experience.
- 3) Click the Change settings button.
- 4) Scroll down and make sure Routing and Remote Access is allowed on Private and Public.

nScape [®] 2.4GHz User Manual	2.4GHz wireless sensor
Allowed apps	
🗧 🕘 🕤 🛧 🔗 « All Control Panel Items » Windows Firewall » Allowed	apps 🗸 🗸 Search Control Panel
File Edit View Tools Help	
Allow apps to communicate through Windows I	irouall
Routing and Remote Access Properties ×	ae settings.
Name:	Change settings
Routing and Remote Access	
Description:	
This feature is used to allow incoming VPN and RAS connections.	
ОК	
I Remote Volume Management     Routing and Remote Access	
Search	
Secure Socket Tunneling Protocol	
SIMP Trap	
	Details Remove
	Allow another app
	OK Cancel

### 14.1.1.3 Router Configuration

On the BeanScape[®] Multiview Server side, open the Router dashboard and open the Port 1723 for both TCP and UDP.

To authorize this port, go to NAT setting or Firewall setting (it depends du router) and add new rule related to the IP address assigned to the PC hosting the BeanScape Server.

S net ) GlobalNe	) et			1	Ŏ5		E	ġ		
	Dev	vice Info	Basic Setup	Adva	nced Setup	Voice	Diag	nostics	Managen	nent
Quick Setup WAN Setup NAT Virtual Servers	NAT Virt Virtual Serve Internal por	tual Servers Setup er allows you to direct t is required only if the	incoming traffic from external port needs t	WAN side (ic to be convert	lentified by Protocol ed to a different por Add	and External port) to t number used by th Remove	the Internal server e server on the LAN	with private IP a side. A maximur	ddress on the LAI n 32 entries can b	V side. The e configured.
Port Triggering	Server Name	External Port Start	External Port End	Protocol	Internal Port Start	Internal Port End	Server IP Address	WAN Interface	NAT Loopback	Remove
IP Address Map	vnp	1723	1723	TCP/UDP	1723	1723	192.168.1.245	ppp1.1	Disable	
ALG/Pass-Through LAN Wireless Parental Control Home Networking			·						·	·

## 14.1.2 VPN Connection (Client)

On the Client side, before installing BeanScape[®] Client, user have to setup a VPN connection to establish the link with the distant BeanScape Multiview Server.

To create a new VPN connection:

1) Go to setting



2) Select Network & Internet

BeanScape [®] 2.40	GHz User Manual	2.4GI	Hz wireless sens	ors	
VVIIIC	iows settings				
nd a setting		2			
Ph Lin	<b>one</b> k your Android, iPhone		Network & Internet Wi-Fi, airplane mode, VPN	Ę.	Persor Backgro
Arr Spe	ne & Language	$\bigotimes$	Gaming Game bar, DVR, broadcasting,	¢	Ease c

3) On the Left panel, click on VPN then select "Add a VPN connection"

BeanScape [®] 2.4GHz User Manual	2.4GHz wireless sensors
Settings	
命 Home	VPN
Find a setting	VPN
Network & Internet	+ Add a VPN connection
Status	
<i>ſſ</i> ≈ Wi-Fi	Advanced Options
.₀00 Cellular	Allow VPN over metered networks On
記 Ethernet	Allow VPN while roaming
ଳ Dial-up	On On
% VPN	
r∰ Airplane mode	
(မှ) Mobile hotspot	

4) Tape the Public Ip of your VPN and use the Login parameters already created



If you are using a Public Dynamic IP, tape the DDNS address instead of the IP (see Case of Dynamic IP)

Add a VPN connection	
VPN provider	
Windows (built-in)	~
Connection name	
VPN	
Server name or address	
demo.ddns.net	×
VPN type	
Automatic	$\sim$
Type of sign-in info	
User name and password	~
User name (optional)	
user1	
Password (optional)	
••••	
✓ Remember my sign-in info	

5) Go the Network Adapter Settings and Right click on the VPN Connection Profile

BeanScape [®] 2.4GHz User	Manual	2.4GHz wireless sensors
	VPN Connection Disconnected	
	WAN Miniport (IKEv2)	Connect / Disconnect Status Set as Default Connection Create Copy
		Create Shortcut Create Shortcut Create Shortcut Create Shortcut Create Shortcut
		Properties

On Properties go to Networking tab and edit the Internet Protocol Version 4 Parameters by assigning to the VPN Client the First IP address on the VPN Range.

In our example the VPN server address is 10.1.1.200, the Client should be configured : 10.1.1.201 to receive the first IP of the range.

VPN Connection Properties					
General Options Security Networking Sharing					
This connection uses the following items:					
✓ TInternet Protocol Version 4 (TCP/IPv4)					
Client for Microsoft Networks	ΤI				
_					
Install     Properties					
Description					
wide area network protocol that provides communication					
across diverse interconnected networks.					
OK Cance	<b>:</b>				

BeanScape [®] 2.4GHz Use	er Manual		2.4GHz wireless sensors	
	Internet Protocol Version 4 (TCP/IPv4) Prop	erties	×	
	General			
	You can get IP settings assigned automatical supports this capability. Otherwise, you need administrator for the appropriate IP settings.	y if your network o ask your network		
	Obtain an IP address automatically			
	Use the following IP address:	Use the following IP address:		
	IP address: 10	. 1 . 1 .201		
	<ul> <li>Obtain DNS server address automatically</li> <li>Use the following DNS server addresses:</li> </ul>			
	Preferred DNS server:			
	Alternate DNS server:			
		OK Car	ncel	
Go to Advanced and Disable using the Default gateway by the VPN Client				
	Internet Protocol Version 4 (TCP/IPv4) Proper	ties X		
	General			
	You can get IP settings assigned automatically i supports this capability. Otherwise, you need to administrator for the appropriate IP settings.	f your network ask your network		
	Obtain an IP address automatically			
	• Use the following IP address:			
	IP address: 10 .	1 . 1 . 201		
Obtain DNS server address automatically				
	Use the following DNS server addresses:			
	Preferred DNS server:			
	Alternate DNS server:			

Advanced...

Cancel

OK

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	Advanced TCP/IP Settings IP Settings DNS WINS This checkbox only applies when you are connected to a local network and a dial-up network simultaneously. When checked, data that cannot be sent on the local network is forwarded to the dial-up network. Use default gateway on remote network	×
	Disable class based route addition   Automatic metric   Interface metric:	
	OK Cancel	

6) On the Security tab, Please make sure that following options are respected
| ~               |
|-----------------|
| vanced settings |
| declines) 🗸 🗸   |
|                 |
|                 |
| $\sim$          |
| Properties      |
|                 |
|                 |
|                 |
| ocol (CHAP)     |
|                 |
| ame and         |
|                 |

# 14.1.3 Localizing Multiview Server

1) On the BeanScape Client, Go to Tools and select BSC srv to localize the distant Multiview server.

Тос	ols	Off.Data Analysis	Advanced func.			
	Be	anScape® configura	tion			
	A	arm Window				
	BeanGateway Ethernet/LAN Config. Export/Import user settings					
	Lo	og File Reader				
	Lo	ocalize BSC srv				
	A	arm Management				

2) Select the IP address assigned to your computer by the VPN connection and click on Localize

💀 Form_LocalizeBSCsrv	—		×
Ethemet config  10.1.1.201  169.254.0.42 169.254.17.166 169.254.103.95 169.254.232.168 192.168.1.245 10.1.1.201		Localize Validate	•

3) Select the IP address of the VPN server

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💀 Form_LocalizeBSCsrv 🛛 —		(
Ethemet config		
10.1.1.201 ~	Localize	
	$\sim$	
10.1.1.200		
	Validate	

4) Click on Start Client





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## 14.1.4 Case of Dynamic IP

In case of Public Dynamic IP on the VPN server side, it is recommended to use NO-IP/Dynamic DNS. Using a DDNS will solve the issue of dynamic IP and keep your VPN Client connected to the VPN server.

To configure your DDN:

- 1) Go to an online DDNS provider like noip.com
- 2) Create your account
- 3) Create a Hostname

Quick Add Hostname Domain  ddns.net		
Hostname 🛛	Domain 🛛	
vpn-demo	ddns.net	~
Record Type		
Need help setting up your device?		Add Hoctnamo
······································		

4) Install the NO-IP Agent on the Computer hosting the VPN server to update automatically the state of Public IP

Record Type	
vpn-demo.ddns.net has been created. <u>Manage it now.</u>	
Need help setting up your device?	1
Dynamic Update Client for Windows	No-IP Support
Download	C Knowledge Base
Keep your current IP address in sync with your No-IP hostname or domain with our Dynamic Update Client	Getting Started Guide
(DUC).	Ontact Us



5) On the VPN Client Side use the DDNS address to configure your VPN connection

VPN erver name or address vpn-demo.ddns.net PN type Automatic re-shared key	×
erver name or address vpn-demo.ddns.net PN type Automatic re-shared key	×
erver name or address vpn-demo.ddns.net PN type Automatic re-shared key	×
vpn-demo.ddns.net PN type Automatic re-shared key	×
PN type Automatic re-shared key	~
PN type Automatic re-shared key	~
Automatic re-shared key	~
re-shared key	
re-shared key	
· · · · · · · · · · · · · · · · · · ·	
ype of sign-in info	
User name and password	$\sim$
ser name (optional)	
user1	
assword (optional)	
•••••	

### 14.2 APPENDIX 2: AUTO-START BEANSCAPE®

Auto-starting BeanScape[®] monitoring software is highly recommended for users who need to run test on times of the day with no human intervention. For example, when you need to take temperature measures during the night and no employee is available to open the software and run the server.

Here we provide a quick solution:

#### 14.2.1 Auto-start software

On BeanScape, click: Tools -> Options



Figure 61: BeanScape Configuration menu

• Check "AutoStart BeanScape" box. This will start automatically the software.



Figure 62: Auto Start option

### 14.3 APPENDIX 3 : FIREWALL EXCEPTION FOR BEANSCAPE®

By default, firewall blocks all unknown network traffic coming in to the network. To permit traffic through the firewall we create exceptions (or rules) that allow certain traffic on the network. In our case the rules are defined by the software which is BeanScape.

Usually when launching BeanScape for the first time your Windows OS will ask you to add an exception and to allow the software to use your network resources, however in case this doesn't occur or rejected, manually adding BeanScape to exceptions list is possible through these following steps:

 Use your Search bar at the windows launcher and look for "Allow an app through Windows Firewall"



Figure 63 : Windows search for firewall screenshot

 Look for BeanScape in the list and check its box, check Private if you are only willing to use BeanScape in your LAN or Public for allowing remote access from outside the LAN.Validate and your BeanScape will be allowed in your network.

anScape [®] 2.4GHz User Manual 2.4GHz					z wireless sensors			
Allowed apps						_		$\times$
🗧 🔶 🕤 🛧 📝 > Control Pane	$\rightarrow$ System and Security $\rightarrow$ Windows Defender Firewall $\rightarrow$ Allowed apps			~	Ō	Search Control Panel		م
	Allow apps to communicate through Windows Defend	ler Firewall						
	To add, change, or remove allowed apps and ports, click Change settin	as.						
	What are the risks of allowing an app to communicate?	🗘 Ch	ange sett	ings				
	Allowed apps and features:							
	Name	Private	Public	^				
	BeanScape							
	Bubble Witch 3 Saga		✓					
	Candy Crush Soda Saga		✓					
	Captive Portal Flow		$\checkmark$					
	Cast to Device functionality		✓					
	Connect		✓					
	Connected Devices Platform		✓					
	Core Networking		✓					
	✓ Cortana	•	✓					
	Delivery Optimization		✓					
	☑ DiagTrack		✓					
	DIAL protocol server			$\sim$				
		Details	Remov	e				
		Allow ar	nother ap	p				
		ОК	Can	cel				

Figure 64: allowed apps window

If you are not familiar to configure a firewall exception, you can directly from BeanScape[®] add this rule automatically.

On the BeanScape[®] menu select Tools, then Advanced Settings then click on validate to add BeanScape[®] to the Firewall.

