

thinknx



# Videointercom Thinknx

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## *IP intercom in Thinknx systems*

The IP intercom uses the VoIP (Voice over IP) protocol: when the bell rings it makes a VoIP call to the configured client (eg. Touch screen, tablet, iPhone) which can then display the door station built-in camera and answer the call. The video intercom then becomes integrated with different interfaces and leave the concept of closed system.

The integration of the IP intercom in Thinknx systems provides two sceneries:

- the presence of a **VoIP PBX** for the registration of clients and call management
- clients make **direct calls** via IP address

The VoIP PBX can be of two types:

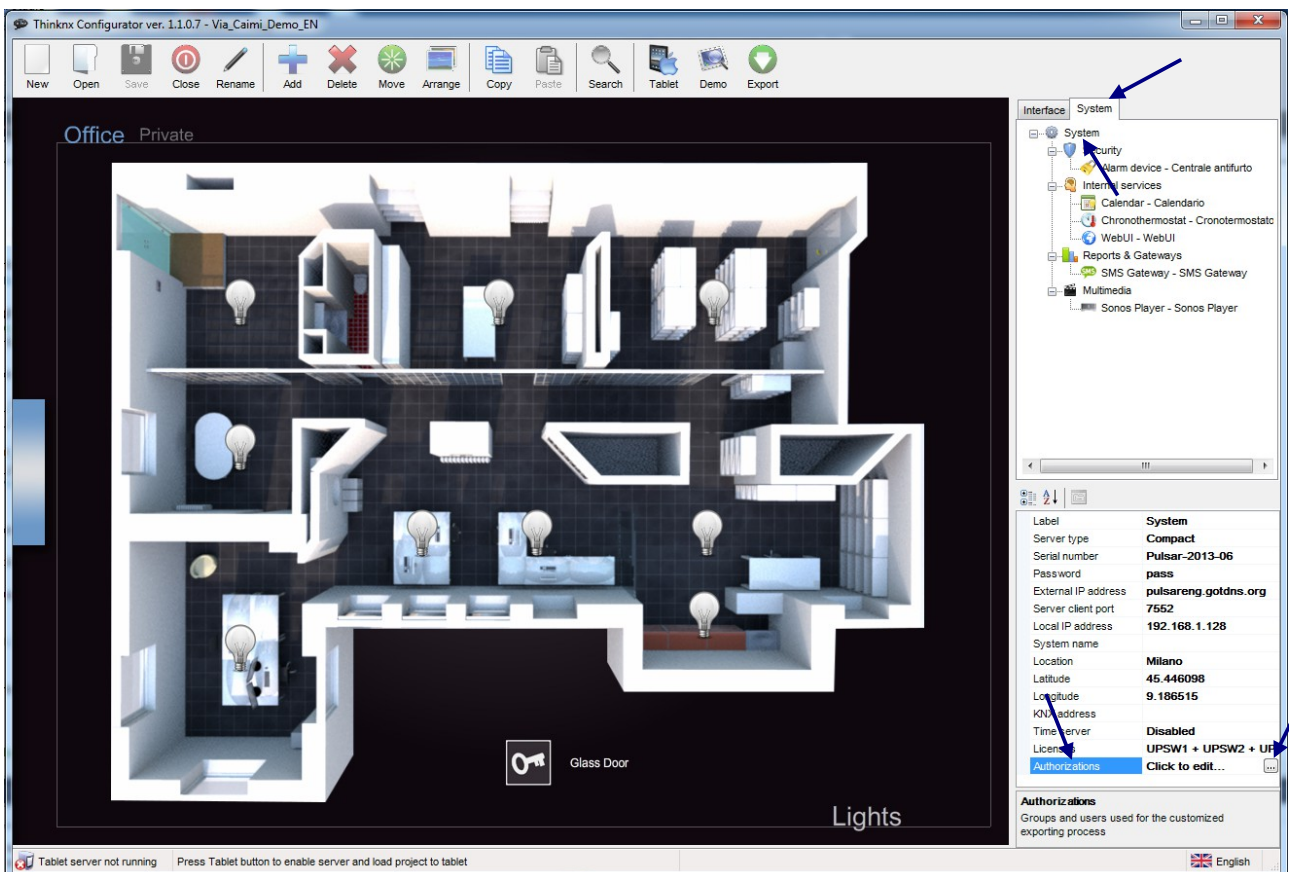
- **internal to Thinknx server**, Alveo Micro and Alveo Compact servers implement this feature if the corresponding license is active. The internal PBX performs all the functions necessary for the proper functioning of VoIP intercom. In particular, the client registration, call forwarding and management of the ring groups. The advantage of this PBX is that it is easily configurable by software Thinknx Configurator.
- **external** to Thinknx system, for example the 3CX software.

## Configuration without PBX

If the project does not require the use of the VoIP PBX, it is sufficient from the Configurator to enable the intercom on the clients and configure the door station in such a way that make calls via IP address.

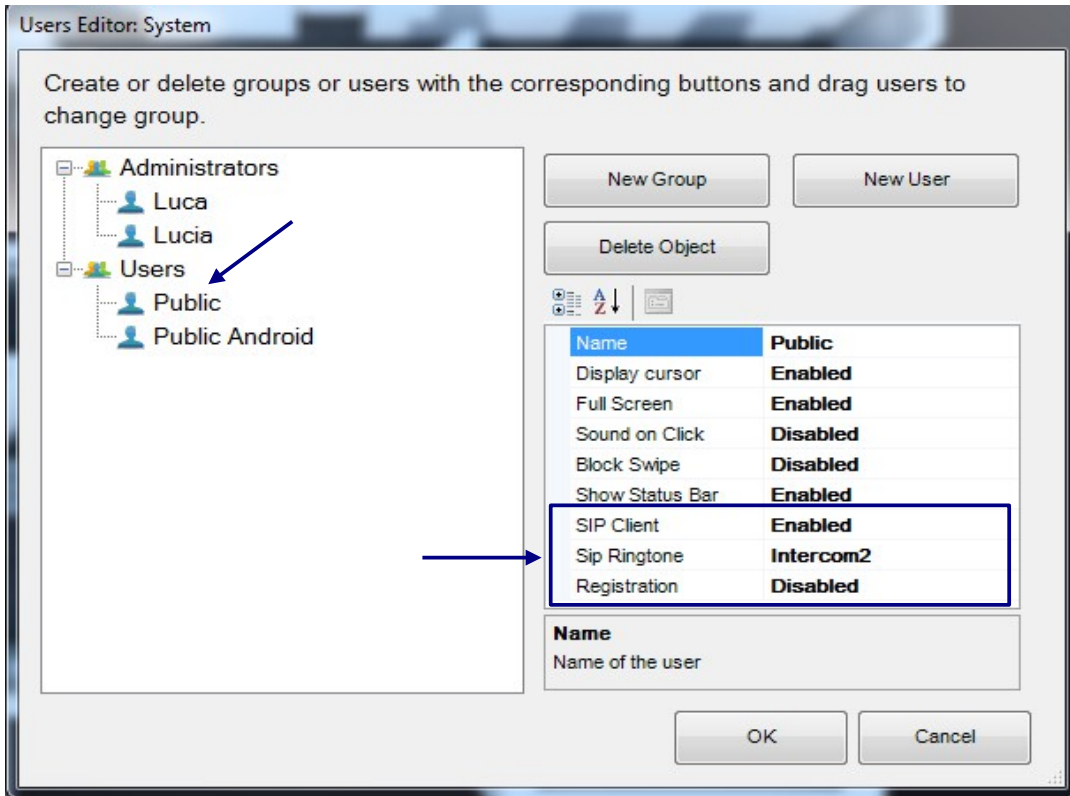
**Warning!!!** This solution, available only for Thinknx Player for Windows, implies that the client with intercom enabled, in other words the client who will play the call from the door station, should be configured with the static IP. It is also not guaranteed that the door station supports direct calls without registration to PBX and ring groups.

In the system tree of the project, select the node "System". In the property grid on the bottom right, select "Authorizations" and click the button that appears on the right.



In the user editor window that appears, select the user (or create a new one, see Configurator manual) for export.

In the property grid, enable the "SIP Client" field, select the desired ringtone in "SIP Ringtone" field and disable "Registration" field. Click "OK" to confirm the changes.



The property "SIP Client" indicates whether the VoIP function, in particular the IP intercom, is enabled on the client.

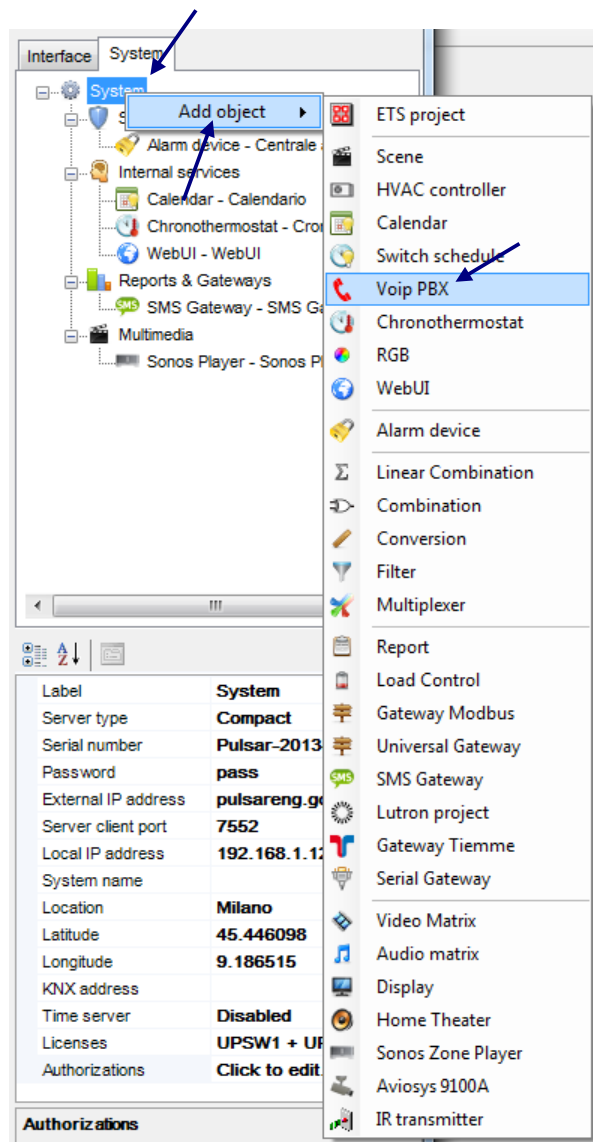
The property "SIP Ringtone" allows you to select one of four ringtones that notify the incoming call on the client.

The property "Registration" indicates whether the client has to register to PBX to receive calls from the intercom.

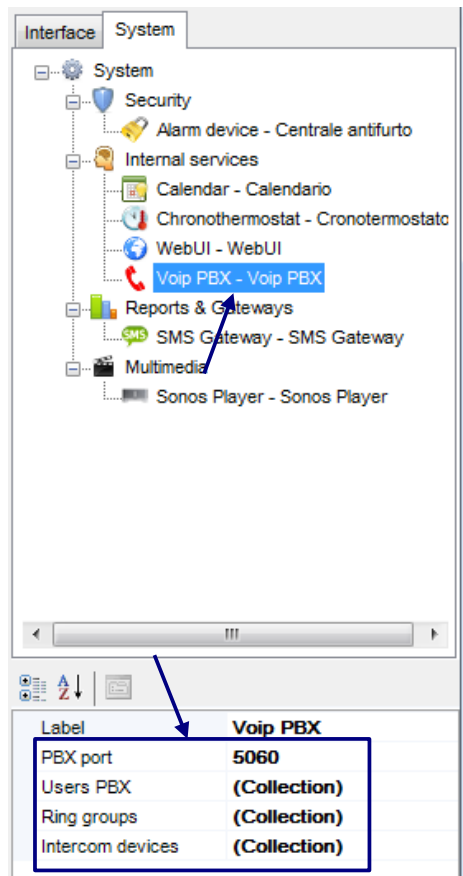
## Configuration with internal PBX

Using PBX inside Thinknx server implies that all extensions used by clients and door stations and intercom devices should be defined in the Configurator.

First of all, in the system tree of the project, click with the right mouse button on the node "System". In the menu that appears select "Add object" to display the list of system objects and click "Voip PBX".



The object "Voip PBX" represents the internal PBX, in its properties you can configure all the extensions, ring groups and door stations.



The property "PBX port" allows you to specify the port of the PBX if different from the default one.

The property "Users PBX" is a list of extensions to associate with clients to register them to PBX.

The property "Ring groups" represents the list of ring groups defined in the PBX.

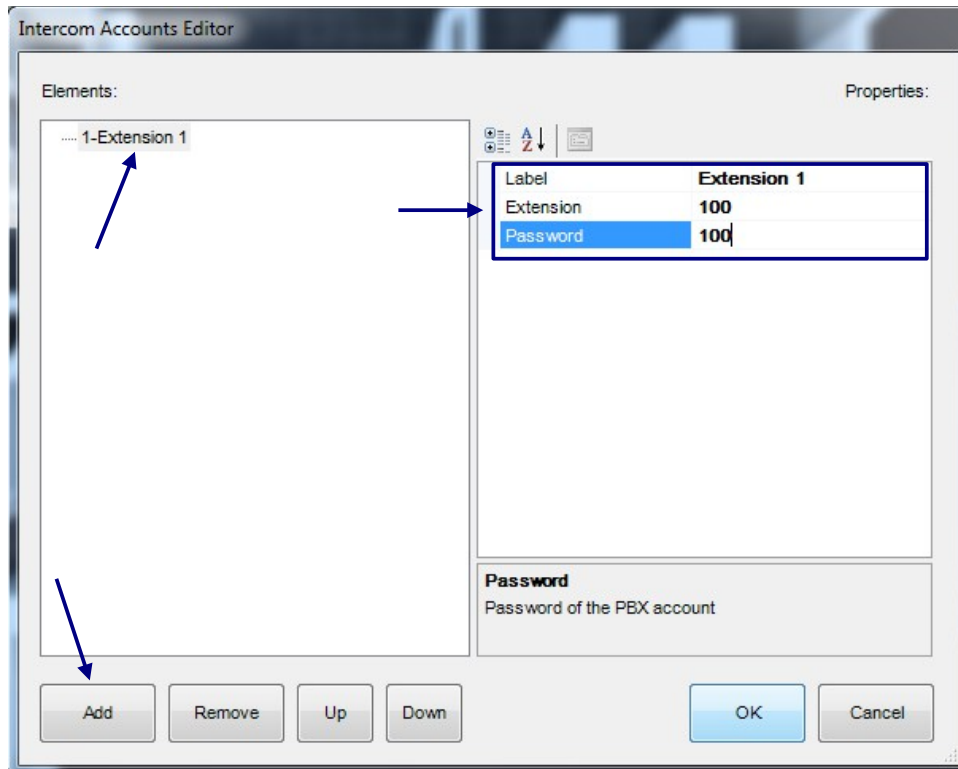
The property "Intercom devices" contains the list of door stations in the project that will have to register to PBX.

**Warning!!!** Only one "Voip PBX" object can be added to the project.

## Configuring extensions

To define the extensions to associate with clients select "Users PBX" in the property grid and click on the button on the right.

In the window that appears, to create a new extension, click on the "Add" button at the bottom. Select the user you created and modify its properties. Click "OK" to confirm.



The property "Label" allows you to assign a name to the extension.

The property "Extension" allows you to specify the extension number that will be used by the client to register to the PBX.

The "Password" property allows you to specify the password associated with the extension.

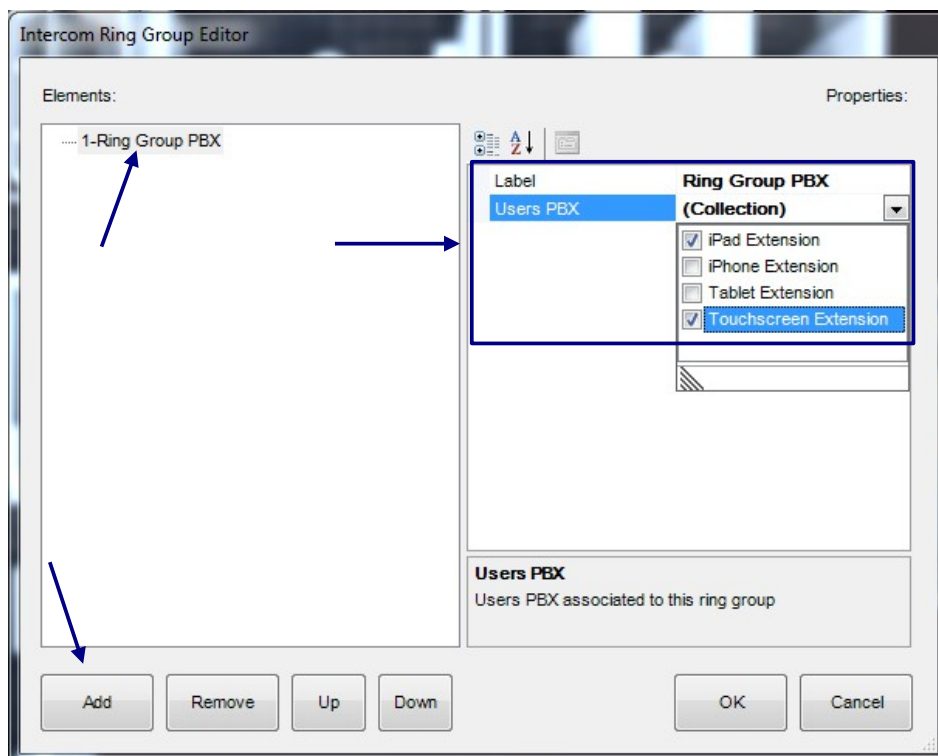


## Configuring ring groups

Ring groups allow you to call multiple extensions with a single number. The door station can then forward the call to multiple clients through a single number.

To set up ring groups, in the properties of "Voip PBX" object, select "Ring groups" and click the button to the right.

In the window that appears, to create a new user group, click on the "Add" button at the bottom. Select the group you created and modify its properties. Click "OK" to confirm.



The property "Label" allows you to assign a name to the ring group.

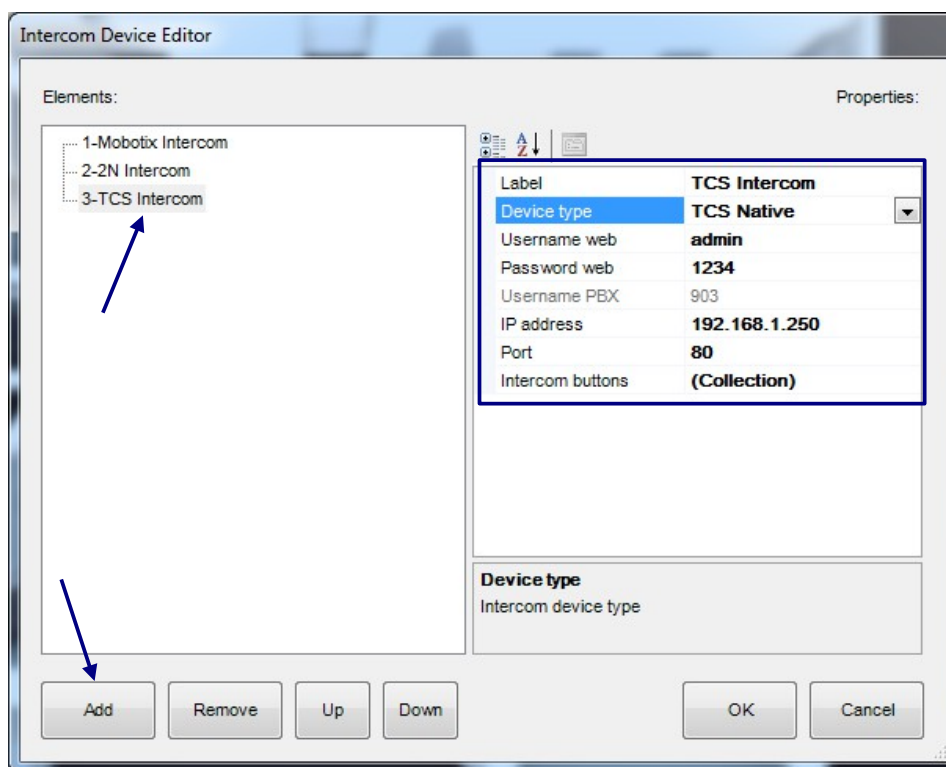
The property "Users PBX" allows you to select extensions that are part of the ring group.

## Configuring door stations (intercom devices)

The door stations must be defined inside the PBX in order to define the extensions they will use to register to PBX.

To define door stations, in other words the intercom devices, select the "Intercom devices" in the property grid and click on the button to the right.

In the window that appears, to create a new intercom, click on the "Add" button at the bottom. Select the device you created and modify its properties. Click "OK" to confirm.



The property "Label" allows you to assign a name to the door station.

The property "Device type" indicates the model of intercom used.

The properties "Username web" and "Password web" correspond to the login to access the web management page of the intercom.

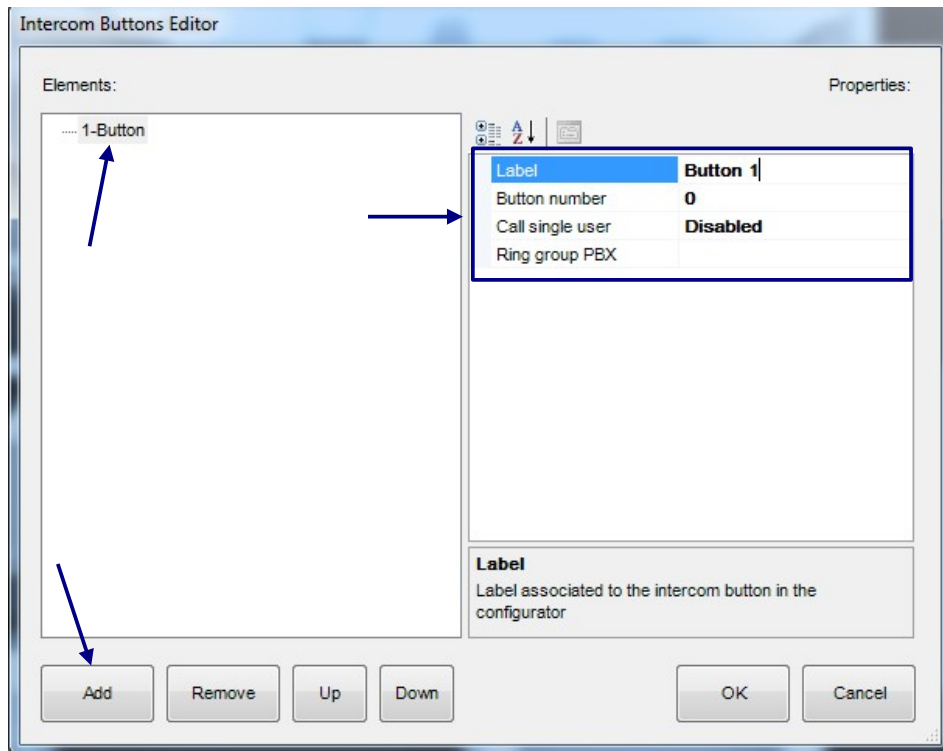
The property "Username PBX" is the extension used by the intercom to register to PBX, it is automatically generated and can not be changed.

The properties "IP Address" and "Port" indicate the address and port of the door station.

The property "Intercom buttons" allows you to set the keypad of the intercom by associating each key an extension or a ring group to call.

To configure the keypad of the intercom, in the property grid, select the "Intercom buttons" field and click on the button on the right.

In the window that appears, to create a button, click on the "Add" button at the bottom. Select the button you created and modify its properties. Click "OK" to confirm.



The property "Label" allows you to assign a name to the button.

The property "Button number" represents the number of the button on the panel, is used to create an association with the physical button of the intercom.

The property "Call single user" indicates whether the call should be addressed to an individual extension or to a ring group when a button is pressed.

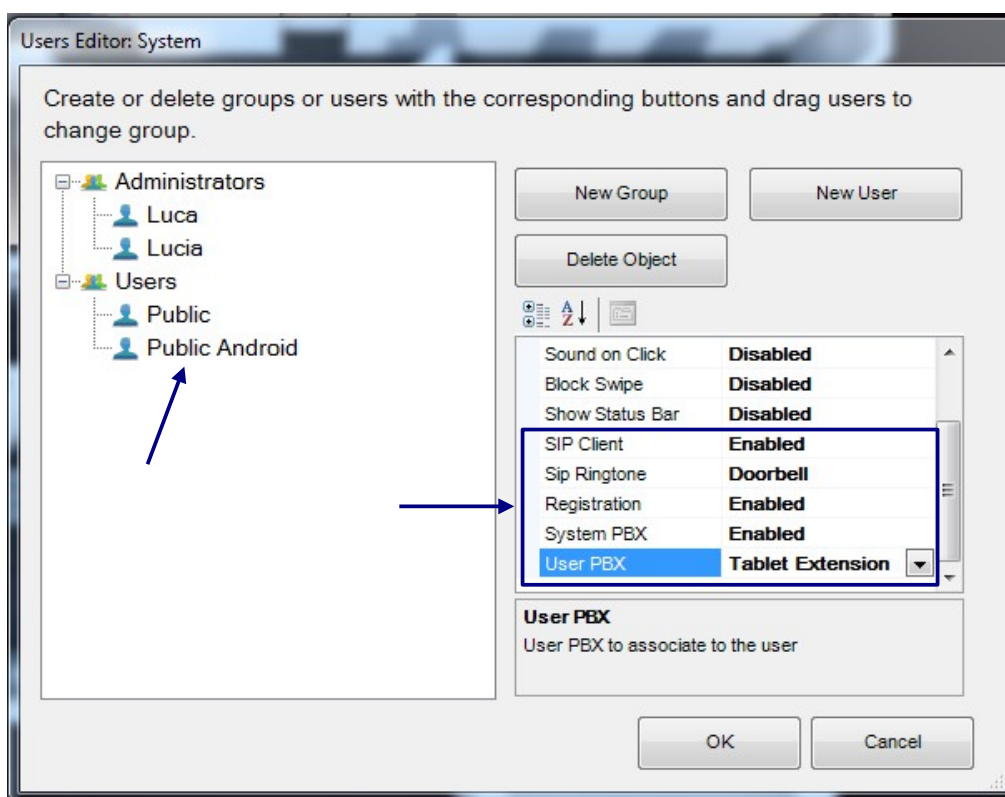
If the "Call single user" property is disabled, the property "Ring group PBX" indicates the call group to associate with the button. If it is enabled, in the property "User PBX" must be specified the extension to call.

## Configuring clients

To enable intercom function in clients the project must be exported with a user profile.

In the system tree of the project, select the node "System". In the property grid on the bottom right select "Authorizations" and click the button that appears on the right (see p. 4).

In the user editor window that appears, select the user (or create a new one, see manual Configurator) for export.



The property "SIP Client" indicates whether the VoIP function, in particular the IP intercom, is enabled on the client. In this case it must be enabled.

The property "SIP Ringtone" allows you to select one of four ringtones that notify you of the incoming call on the client.

The property "Registration" indicates whether the client has to register to the PBX to receive calls from the door station. In this case it must be enabled.

The property "System PBX" indicates whether you are using a PBX internal to the Thinknx server. In this case it must be enabled.

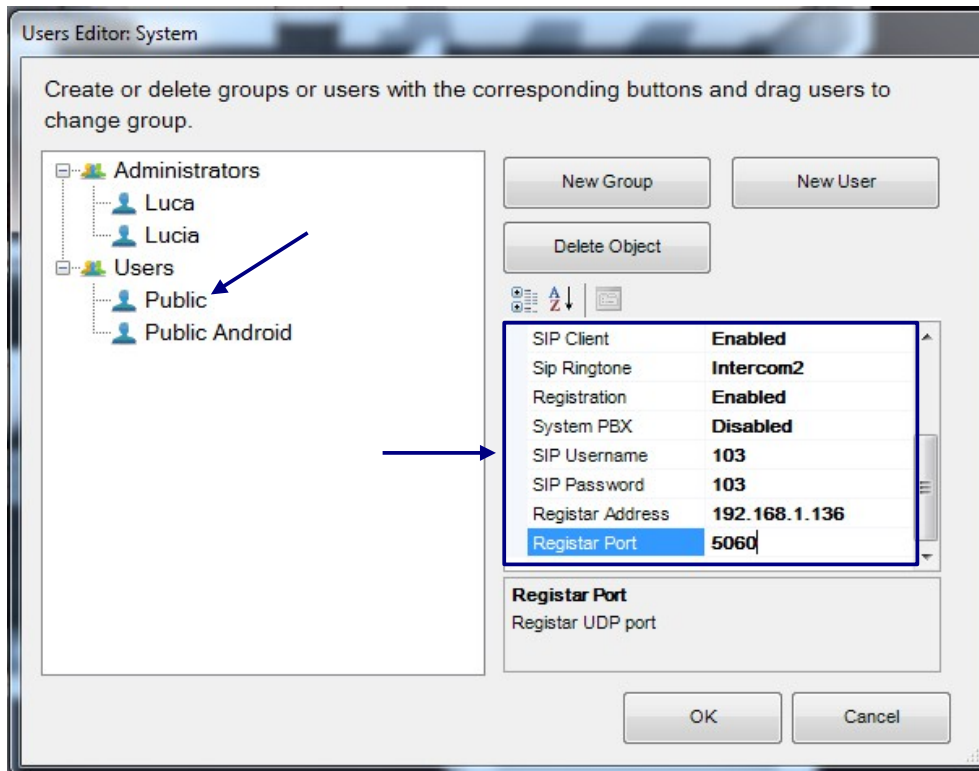
The property "User PBX" allows you to associate an extension defined in the "System PBX" to the client.

## Configuration with external PBX

If the PBX is outside the Thinknx system, in the Configurator you need only to configure the extensions to associate to clients to allow them to register.

In the system tree of the project, select the node "System". In the property grid on the bottom right, select "Authorizations" and click the button that appears on the right (see p. 4).

In the user editor window that appears, select the user (or create a new one, see manual Configurator) for export.



The property "SIP Client" indicates whether the VoIP function, in particular the IP intercom, is enabled on the client. In this case it must be enabled.

The property "SIP Ringtone" allows you to select one of four ringtones that notify you of the incoming call on the client.

The property "Registration" indicates whether the client has to register to the PBX to receive calls from the door station. In this case it must be enabled.

The property "System PBX" indicates whether you are using a PBX internal to the Thinknx server. In this case it must be disabled.



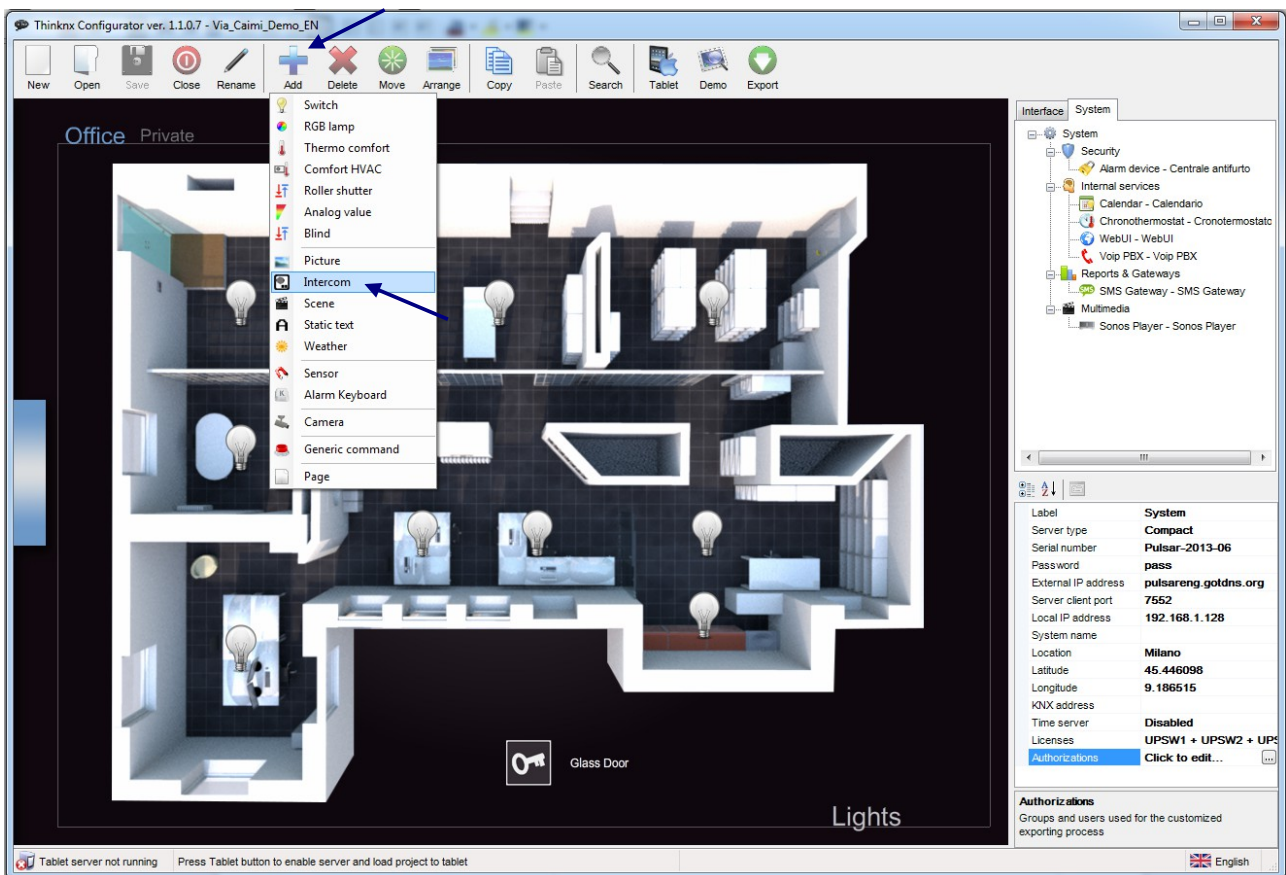
The properties "SIP Username" and "SIP Password" represent the extension number and password of the extension defined in the external PBX and used by the client to register.

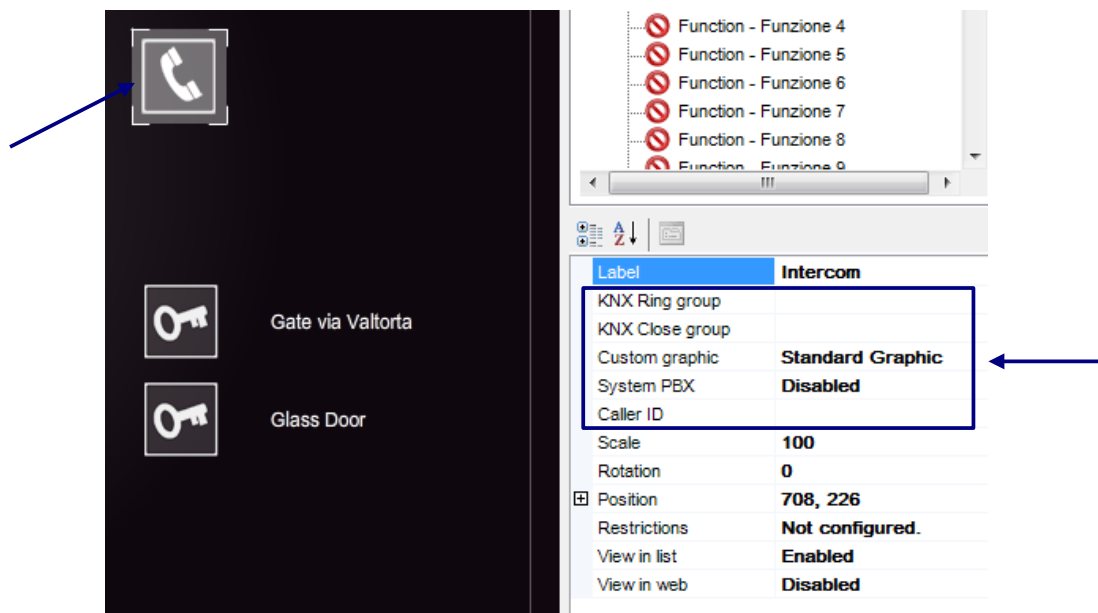
The properties "Registrar Address" and "Registrar Port" represent the IP address and port of the external PBX.

## Configuring intercom graphical interface

In order to answer the call from the door station a specific button must be added in the graphic interface of the project.

Click on the “Add” button on the top menu and select “Intercom” in the menu that appears.





The property "KNX Ring Group" represents the KNX group to which a telegram is sent with bit value 1 when the client receives a call from the door station. It can be used to enable alarms connected to KNX actuators.

The property "KNX Close Group" represents the KNX group to which a telegram is sent to close the conversation.

The property "Custom graphic" allows you to select the type of button that appears in the GUI. The item "Standard Graphic" indicates that the button is single and is used for both open and close the call. The "Custom Graphic" item indicates that you can choose a picture to assign to the button, the functioning is the same as the standard graphic. The item "Double Button Graphic" lets you view two buttons, one to open and one to close the call.

The property "System PBX" allows you to specify whether the project requires a PBX inside the Thinknx server, in other words if the object "Voip PBX" has been added to Configurator project.

If the "System PBX" property is enabled, you will see the property "Intercom PBX" that associates the "Intercom PBX" object (created in the "Voip PBX" object) to the "Intercom" object.

If the "System PBX" property is disabled, you will see the property "Caller ID" in which you have to specify the extension number used by the door station.

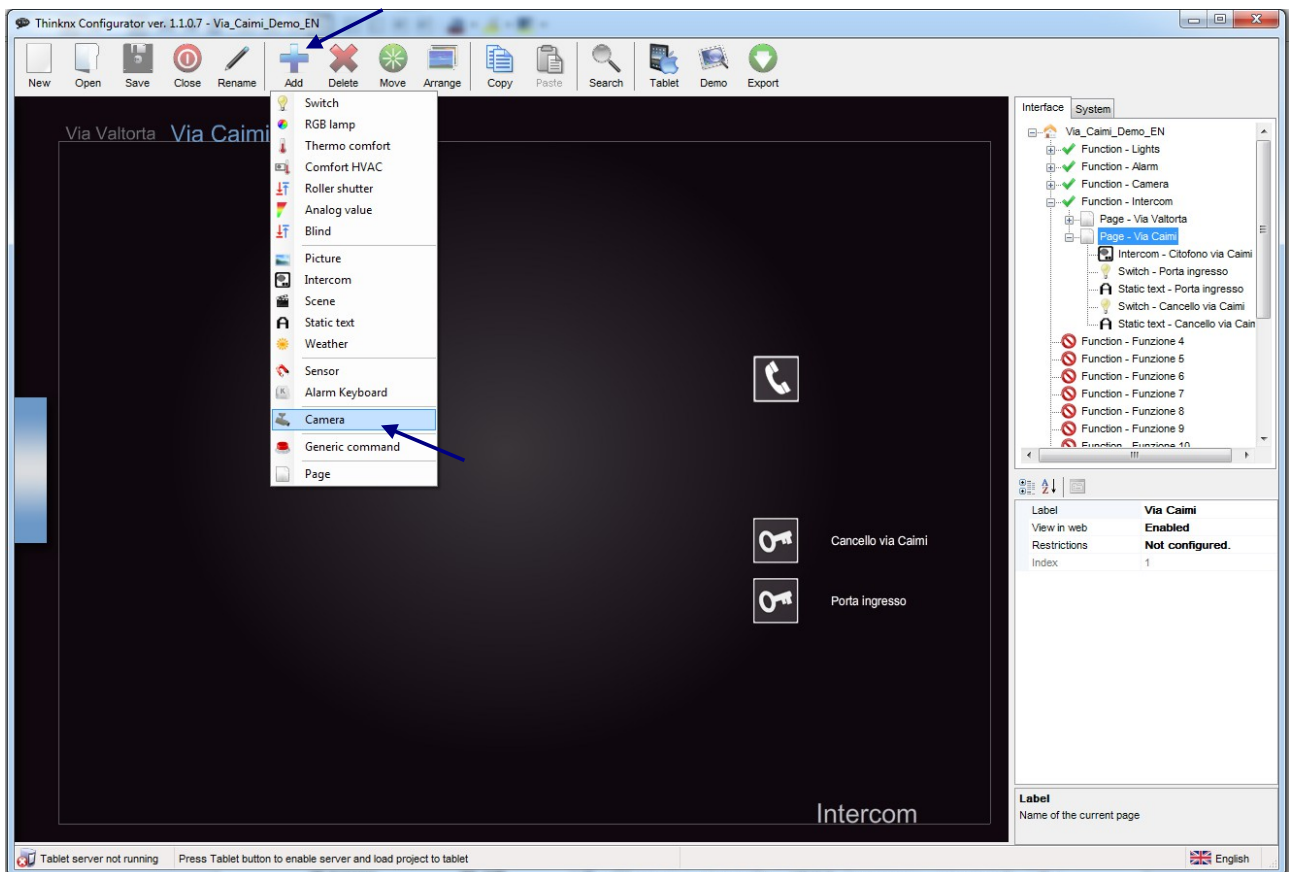
**Warning!!!** If you do not know the Caller ID of the door station, you can retrieve it: leave the Caller ID field blank, enter the data for registration (see p. 13) and upload the project on iPad or iPhone. With the project open on the iOS client, close the app (see p. 20) and make the call from the door station. The extension number of the door station (ie the desired Caller ID) will be displayed in the notification of the iOS client (see p. 21).



## Configuring door station camera

The built-in camera in the door station must be handled like a normal IP camera.

First, add the camera to the project by clicking the "Add" button in the top menu and select the item "Camera".



Label	Camera
External address	
External port	80
Local address	
Local port	80
Type	Generic Camera
Image dimension	640 x 480
Password	
Image path	
Use local connection	Disabled
Username	
Rotation	0
Position	39, 113

The properties "External Address" and "External Port" indicate the IP address and port of the camera so that it is visible outside the LAN.

The properties "Local Address" and "Local Port" indicate the IP address and port of the camera inside the LAN.

The property "Type" indicates the camera model. Since it is an intercom, the door station camera types are already defined ("Mobotix Camera", "2N intercom camera", "TCS intercom camera"). By



selecting one of these models is already offered the correct value of the property "Image Path".

The property "Image dimension" is used to specify the size of the camera image in the user interface.

The properties "Username" and "Password" are not necessary for door stations TCS and 2N.


The "Use local connection" property must be enabled if you want the camera connection occurs via local address when the client is inside the LAN.


**Warning!!!** To view camera images even when the client is outside the LAN it is necessary to open the port specified in the "External Port" property on the router (and on firewall, if there is one).


## Intercom on client

Once you upload the project on the client, if there is a VoIP PBX in the project and the intercom license is active, the client will proceed to registration. The registration state can be controlled by the handset shaped icon in the lower left.

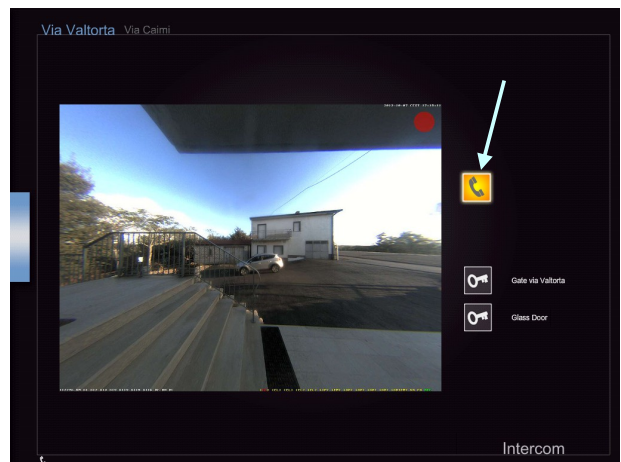


The icon  indicates the client is registering.

The icon  indicates the client is correctly registered to PBX.

The icon  indicates the client is not registered to PBX because the client isn't in the LAN, PBX is not reachable or client's extension credentials are incorrect.

When the button in the door station is pressed, a call is made to the clients (associated to the button) that will start to ring. The client GUI updates to the page containing the intercom button. Since one page can contain more than one intercom button, the ringing intercom icon vibrates to make it more intuitive from which button to answer the call.



To answer the call, simply press the intercom button. When the icon turns yellow it means you have established communication with the door station. To end the call, just press the intercom button and the icon will return to gray.

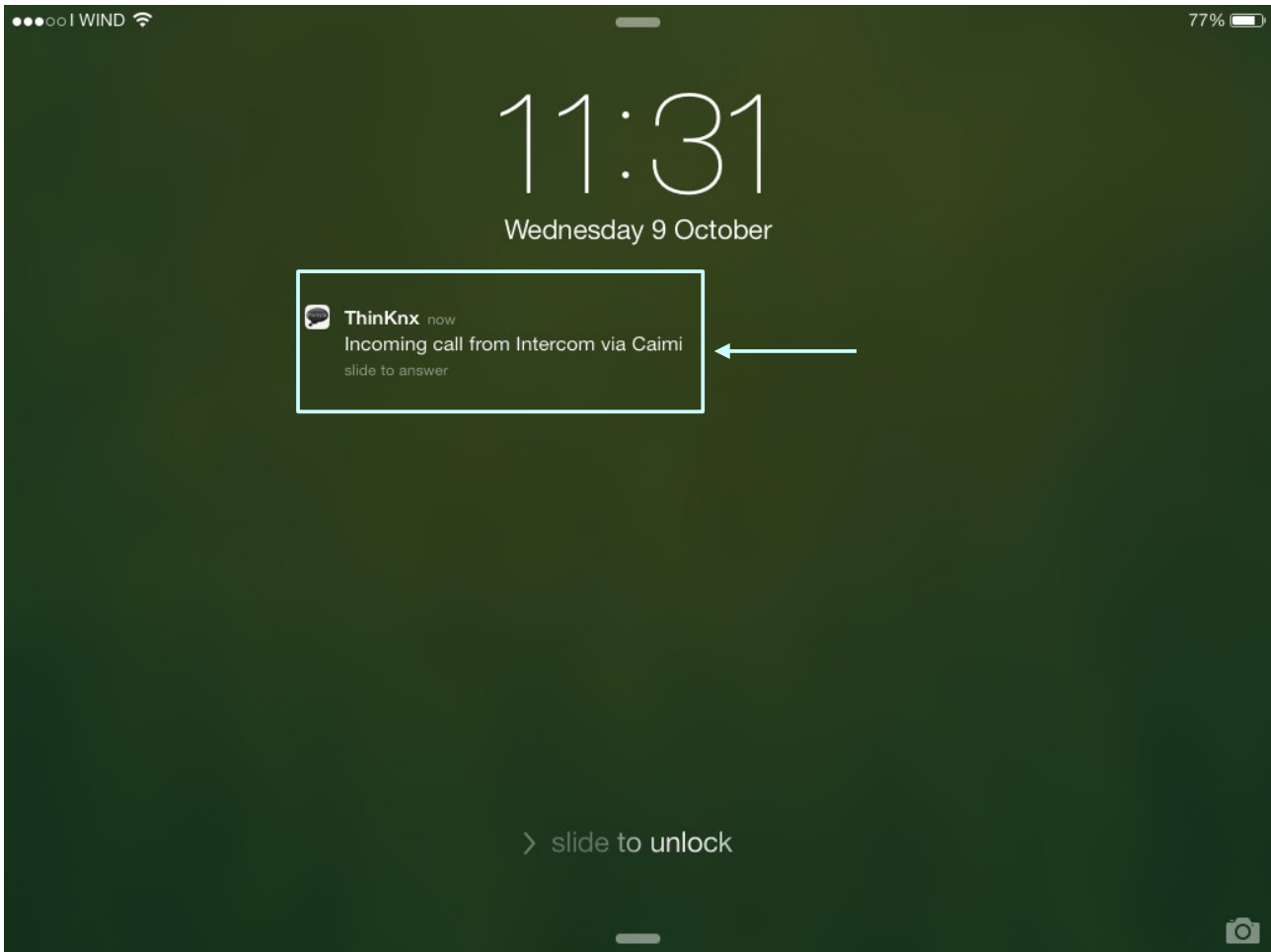
## *Managing background in iOS*

The intercom function for iOS client (iPhone and iPad) also supports background mode that allows you to still receive calls even if you are using other apps.

A necessary condition to use background mode is that multitasking is enabled in the app: in the Thinknx and Thinknx Pocket apps settings the field "Use multitasking" should be checked.

**Warning!!!** When the app enters background mode with multitasking, only VoIP PBX connection remains active while connection to Thinknx server is closed so as not to generate unnecessary data traffic. Keeping VoIP PBX connection open does not involve a great deal of battery.

When there is an incoming call, even if the iPad or iPhone are in standby mode, a notification appears on the screen with the ringtone selected in the project.





**Warning!!!** If the call is coming from an intercom configured in the project, the notification text specifies the intercom name, otherwise it specifies the extension number of the caller but it won't be possible to answer the call within the project.

To open the app and answer the call you simply slide your finger on the notification from right to left. In iOS7 you will also need to enter the code to unlock the device.

## *Managing background in Android and Windows*

If you are using an Android client or a Windows Player, if the device is in standby mode, when an incoming call occurs the application returns to foreground displaying the page containing the corresponding intercom.

In Android, to keep running the app in background mode you need to close it with Home button  and not with Back button  which instead completely closes it and unregisters the client.