



D-SERVER

D-SETUP user manual

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A1- LIST OF REVISIONS OF THIS MANUAL

Rel. 2.2	13/06/22	Improved terminology and description of network sharing
Rel. 2.1	01/03/22	Par. A2: updated D-SERVER and D-SETUP versions Par. 2.3: description and editing of LAN parameters Removed reference to USB port as it is no longer available
Rel. 2.0	07/07/21	Par. 2.1: switch from APP to TOOLS mode. Added Par. 2.4: updating FW via ETH. Update to D-SETUP 0.8.2.0.
Rel. 1.1	02/11/20	Update to D-SETUP 0.4.0.0
Rel. 1.0		First emission

A2- RECOMMENDATIONS AND PRLIMINARY INFO

WARNING: this manual applies to:

D-SERVER equipped with firmware: 2.0 or higher

D-SETUP version: 1.00.00 or higher

The functions described in this manual do not require software to be installed on the PC as the programming tool, D-SETUP, is web-based and integrated in the D-SERVER controller; this makes it possible to manage programming also from devices other than PCs, e.g. Tablets and Smartphones, regardless of the operating system of the device itself. It is therefore not necessary to install any APP.

The Tools installed into D-SERVER controller can be easily updated in a few seconds as described in this manual.

Note

The declared characteristics and this manual are subject to change without notice.

1- MAIN FEATUES

1.1- Introduction

The D-SERVER bus system is based on the DALI-2 standard. This system allows to connect, on the same DALI bus, lighting devices, presence and light sensors, buttons and generic inputs, see Figure 1. The difference compared to previous versions of DALI systems lies precisely in the fact that it becomes possible to connect on the same bus the "input devices", thus making DALI-2 a stand-alone system.

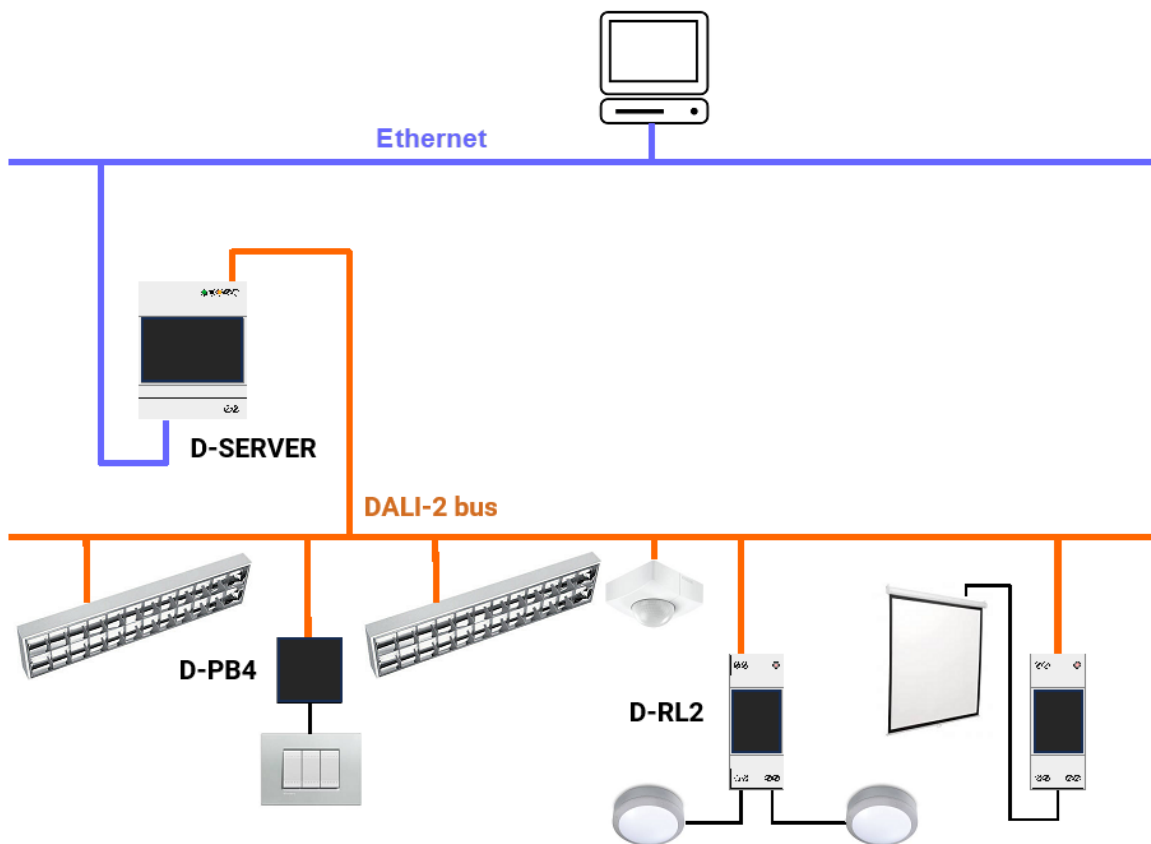


Figure 1: DALI-2 system architecture

The main advantages are:

- Easier wiring: only one line for lighting, switches and sensors
- Reduction of overall costs
- Simplicity of programming as it operates on a single system
- Backwards compatibility towards lighting devices with previous DALI protocol

Figure 1 shows the architecture of a system based on D-SERVER: both the lighting devices (also of the ON-OFF type using a DLRL module) and the input devices are connected on the same DALI bus. The operating logic is managed by D-SERVER controller, which, on the basis of the information collected by sensors and buttons and according to the loaded configuration, appropriately controls the output devices.

Each device in the field has an address (called short address in DALI terminology); the addresses are in the range 1 to 64 for the output devices (CG=Control Gears: ballast, LED Driver, etc.) and 1 to 64 for the input devices (CD=Control Devices: push-button panels, sensors, etc.).

1.2- Terminology and syntax

In this manual, some symbols and notations will be used; the meaning of these is here bottom explained.

- **Lamps:** the “Control Gears” of DALI system (ballast, LED Driver, Relay, ecc.)
- **Control devices:** the “Control Devices” of DALI system (sensors, buttons, etc.)
- **Groups:** Set of lamps that must be controlled together (therefore the lamps that must behave in the same way)
- **Room:** Zone made by groups of lamps, sensors, buttons etc.
- **Scene:** Definition of a specific operation of the devices present in a room, specifically the logic that controls them
- **SA:** Short Address, unique address of a DALI device
- **CG:** Control Gear, output device (ballasts, LED drivers, Relays, etc.)
- **CD:** Control Device, input device (sensors, buttons, etc.)

1.3- Required Software and Hardware

To program the D-SERVER system it is not necessary to install any software as the programming tool, called D-SETUP, is web-based and integrated in the D-SERVER controller itself; this makes it possible to manage programming also from PCs with different operating systems but also from devices other than PCs, therefore Tablet and SmartPhone, both IOS and ANDROID. What you need is simply one of the browsers that are commonly pre-installed, so there is no need to install any APP.

The heart of the D-SERVER system is the D-SERVER controller which takes care of acquiring the field events and, based on the programming that has been transferred, controlling the outputs.

The DALI-2 bus basically allows 3 classes of connectable devices:

- application controller: it is the control unit that controls the system, in our case the D-SERVER controller
- control gears: these are the lamp drivers, therefore basically ballasts, LED drivers, but also relay output modules (in our case the DLRL modules); they are identified with an address between 1 and 64
- control devices: they are input devices, therefore light sensors, motion or presence sensors, button and switch interfaces (in our case DL4PB and DL4SW), gateways to other systems (e.g. DLWRX); they are identified with an address between 1 and 64

1.4- Main features of D-SERVER controller

- power supply 100 ÷ 240 V~ 50/60Hz
- current supplied to DALI bus: guaranteed 230mA, max 250mA
- power supply voltage to DALI bus: 15V
- manages up to 64 output devices (Control Gear, e.g. ballasts, LED driver,s relay outputs) and up to 64 input devices (Control Devices, e.g. sensors, buttons), depending on the total current consumption of installed devices
- addressing of connected DALI devices
- auto detection of connected DALI devices
- 16 DALI groups
- 16 rooms with 8 different scene per room
- Ethernet connectivity

- sharing of information between different buses through the ETH port
- simple configuration of the system by creating rooms and inserting groups of lamps, buttons, sensors, relays
- on-board clock with backup battery for creating time schedulers
- button on the module for switching on, off and dimming all the connected lamps even if D-SERVER has not be programmed yet
- diagnostic LEDs

2- D-SETUP

2.1- Description

As already mentioned, the programming/configuration of the D-SERVER system is based on a web-based tool installed in the D-SERVER controller itself and usable through any browser.

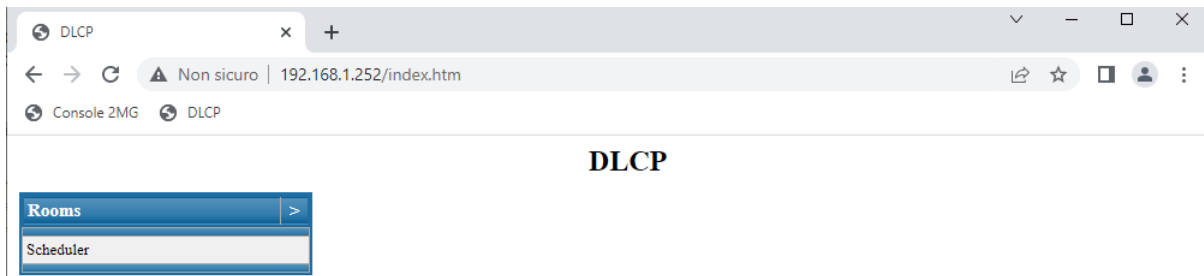
To enter D-SETUP, connect to D-SERVER via the ETH port; open the chosen browser on your device (PC, Tablet, etc.) and type in the IP address assigned to D-SERVER, which by default is 192.168.1.252.

The login credentials will be requested, which by default are:

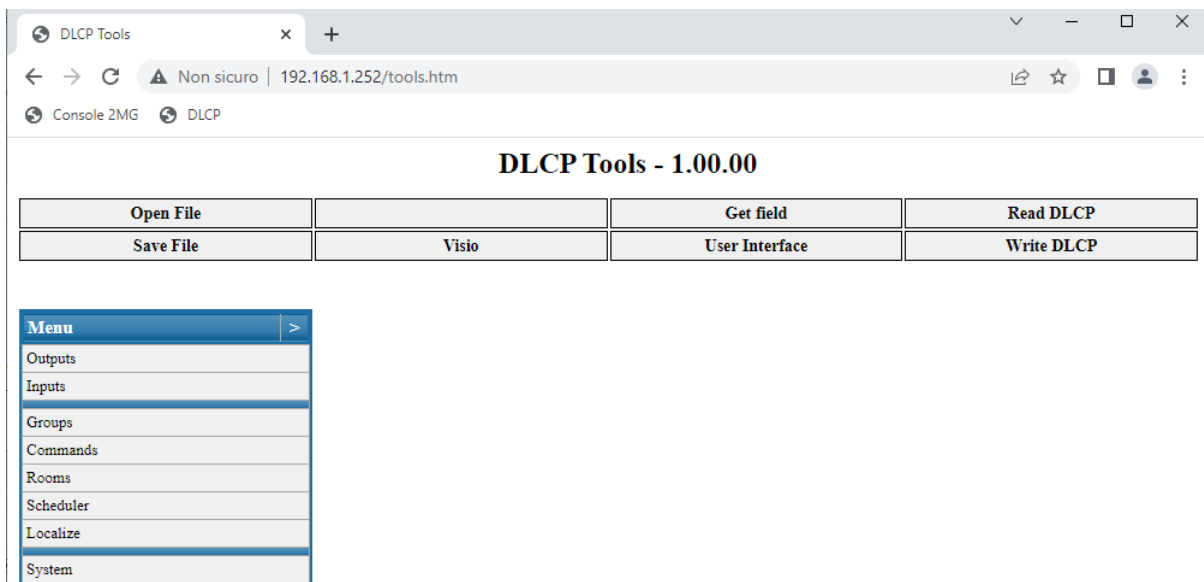
Username: admin

Password: admin

After the login, if D-SERVER is “new” (without any program), the following window will be shown:



The previous window, which can be defined as an user’s level “APP”, will be described later; to configure the system, therefore at the installer level, it is necessary to go to the related page. To do this, in the address bar, type 192.168.1.252/tools.htm; the main page of D-SETUP will then be displayed:

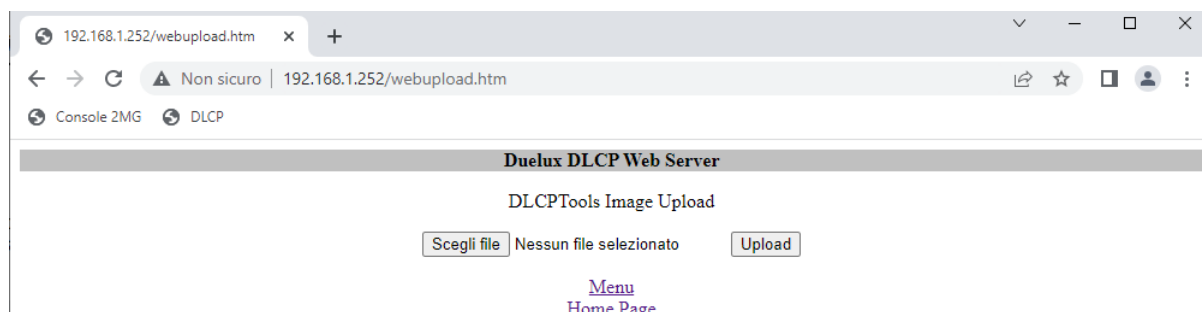


The title bar shows the version of D-SETUP currently installed in the D-SERVER controller. Always check for the latest versions, so that you are always up to date with new features.

2.2- Updating D-SETUP

D-SETUP is constantly updated to introduce improvements and new functions, as well as to correct any possible bug. Always check that the latest version of the tool is loaded in your D-SERVER controller.

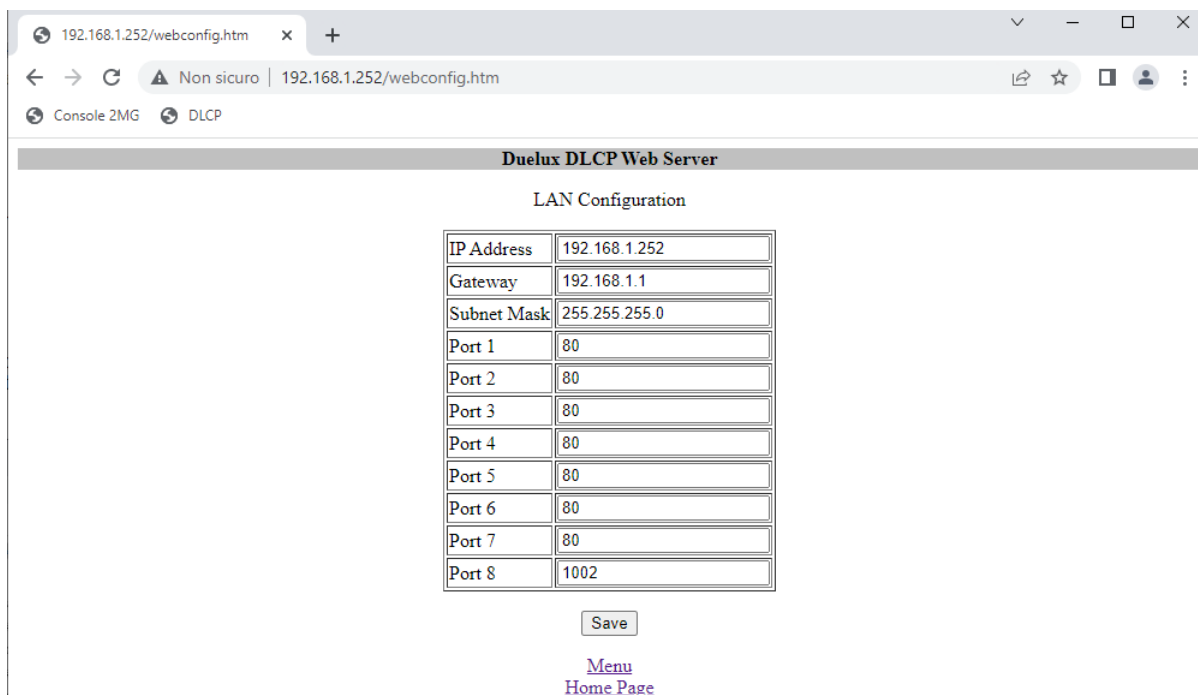
To upload a new version of D-SETUP, modify the address bar by entering: 192.168.1.252/webupload.htm (the IP address is the default one but it may be different if it has been modified):



Click on Browse, choose the updated D-SETUPxxx.bin file and finally click on Upload. At the end click on Home Page to return to the D-SETUP home screen.

2.3- IP address and ports

To modify the IP address and the other ETH communication parameters, enter the following address in the browser bar: 192.168.1.252/webconfig.htm (the IP address is the default one but it may be different if it has been modified or the connection is made by a remote site); the following page will be displayed:



The parameters shown in this window are the factory ones; to modify them, enter the desired parameters and then click on the Save button.

Note: port 8 is reserved, therefore the factory value cannot be changed.

2.3.1- Restoring factory configuration

In the event that it is not possible to remember the IP address that has been assigned, and therefore the configuration window above cannot be accessed, it is possible to restore the factory parameters as follows:

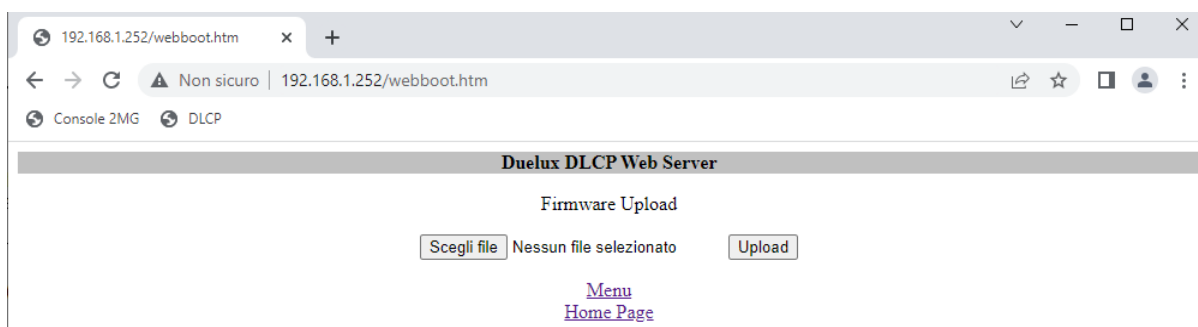
- switch off D-SERVER
- press and hold down the button (hole furthest to the left of the terminal cover on the DALI bus side)
- switch on D-SERVER: the yellow LED will start a regular blink
- keep the button pressed until the yellow LED stops blinking (about 20 seconds)

Warning: this procedure is available for D-SERVER FW versions 1.1 or higher.

2.4- Updating FW of D-SERVER controller via ETH

The FW updating of D-SERVER D-SERVER controller can be also performed through ETH port, therefore from a LAN or from a remote site; a web browser is enough to do this.

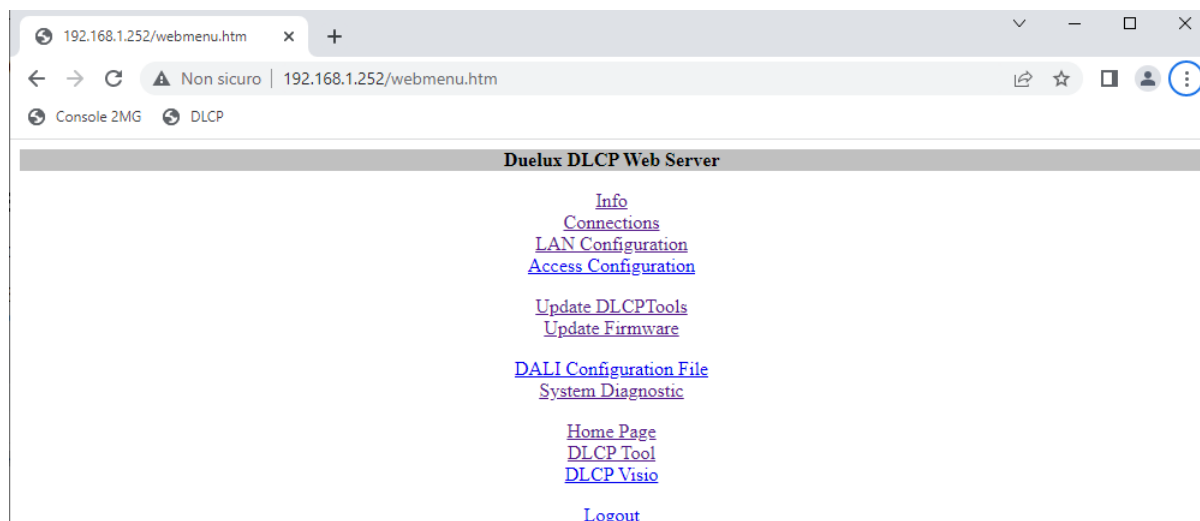
To upload a new FW version, enter in the address bar: 192.168.1.252/webboot.htm (the IP address is the default one but it may be different if it has been modified or the connection is made by a remote site):



Click on Choose File, choose the updated D-SERVERxx.bex file, then click on Upload button and wait for the end of the operation (few seconds). Pay attention: the file to be loaded is .bex and NOT .hex.

2.5- Main menu

Typing 192.168.1.252/webmenu.htm (the IP address is the default one but it may be different) in the address bar, the main menu of D-SETUP will be shown:



3- Setting Up

3.1- Discovery and addressing of DALI field

Normally, on a “new” system, the first operation to be done is a scan for discovering the devices installed in the field and their addressing. This implies that all devices must be connected and powered, otherwise it is evident that they will not be detected.

To start the discovery select System - Reset DALI field:

Menu	System	X
Outputs	Node ID DLCP	
Inputs	Net sharing	
Groups	Acquire inputs	
Commands	Switch all on	
Rooms	Switch all off	
Scheduler	Reset DALI field	
Localize	Check and repair addresses	
System	Reconfigure outputs and inputs	
	Read outputs values	

Confirmation of the operation will be requested; take in account that any previous addressing of the devices in the field will be lost as the address assignment procedure is absolutely a RANDOM process. At the end of this procedure, the main menu will called back.

3.2- Managing Outputs (CG) and Inputs (CD)

Once discovered and addressed all the installed DALI devices, it is a good idea to do a first check as follows:

Menu	Outputs	X
Outputs	CG1 L 1	
Inputs	CG2 L 2	
Groups	CG3 L 3	
Commands	CG4 L 4	
Rooms	CG5 Output 5	
Scheduler	CG6 Output 6	
Localize	CG7 Output 7	
	CG8 Output 8	
System	CG9 Output 9	

Menu	Inputs	X
Outputs	CD1 PB 1	
Inputs	CD2 PB 2	
Groups	CD3 PB 3	
Commands	CD4 SE 4	
Rooms	CD5 Input 5	
Scheduler	CD6 Input 6	
Localize	CD7 Input 7	
	CD8 Input 8	
System	CD9 Input 9	

Under the item Outputs it will be possible to see how many output devices (Control Gears) have been found and which SA has been assigned (the free ones remain in gray color), while under the item Inputs it will be possible to see the found input devices (Control Devices), the assigned SA and also the type (PB=PUSH-button, SE=sensor, SW=Switch, etc.).

In both cases it is possible to assign a name to the outputs and to the inputs; for push buttons and switches it is also possible to assign a name to each of the 4 items.

Menu	Outputs	Configuration CG1	X
Outputs	CG1 Lamp 1 Off.1	Name Lamp 1 Off.1	
Inputs	CG2 Lamp 1 Off.2	Blink	
Groups	CG3 Lamp 2 Off.1	On/Off - Open/Close	
Commands	CG4 Lamp 2 Off.2	Regulation	
Rooms	CG5 Output 5	Swap Address	
Scheduler	CG6 Output 6	Bank 0 - Info	
Localize	CG7 Output 7	Bank 2 - Configuration Parameters	
	CG8 Output 8	GTIN	
System	CG9 Output 9		

Menu	Inputs	Configuration Input 1	X
Outputs	CD1 Keypad Off.1	Name Keypad Off.1	
Inputs	CD2 PB 2	Type Push Button	
Groups	CD3 PB 3	P1 PO1-1	
Commands	CD4 SE 4	P2 PO1-2	
Rooms	CD5 Input 5	P3 PO1-3	
Scheduler	CD6 Input 6	P4 PO1-4	
Localize	CD7 Input 7	Blink	
	CD8 Input 8	Swap Address	
System	CD9 Input 9	Bank 0 - Info	
	CD10 Input 10	Bank 2 - Configuration Parameters	
	CD11 Input 11	GTIN	
	CD12 Input 12		

The configuration menu of each Output (Control Gear) allows to:

- assign a name (as already mentioned)
- enable the lamp blinking so that it can be identified in the system
- turn on/off the lamp
- adjust its level (dimming) using the slider that appears
- swap the SA with another one
- ask for information about that GC (Bank 0 – Info)
- configure some CG parameters, if any (Bank 2 - Parameter Configuration), for expert users only
- track the manufacturer and model of the CG through its GTIN (if an INTERNET connection is available, the DALI Alliance website will open to the page related to that product, if it is present in the database)

The configuration menu of each Input (Control Device) allows to:

- assign a name to the input interface or to sensor
- change the type of CD between sensor, keypad and switch; this option is only useful when programming without being physically connected to the system, otherwise the CD type is automatically detected by D-SERVER during the initialization procedure
- assign a name to each of the 4 push buttons or switches or choose whether the CD is a presence or light sensor or both
- enable the blinking of the LED on the CD, especially useful for identifying the sensors in the system
- swap the SA with another one
- ask for information about that GD (Bank 0 – Info)
- configure some CD parameters, if any (Bank 2 - Parameter Configuration), for expert users only
- track the manufacturer and model of the CD through its GTIN (if an INTERNET connection is available, the DALI Alliance website will open to the page related to that product, if it is present in the database)

Configuration menu of a sensor:

Menu	Inputs		
Outputs	CD1	Keypad Off.1	
Inputs	CD2	PB 2	
Groups	CD3	PB 3	
Commands	CD4	SE 4	
Rooms	CD5	Input 5	
Scheduler	CD6	Input 6	X Light Sensor
Localize	CD7	Input 7	X Presence Sensor
System	CD8	Input 8	
	CD9	Input 9	
	CD10	Input 10	
	CD11	Input 11	
	CD12	Input 12	
	CD13	Input 13	

Configuration Input 4		X
Name	SE 4	
Type	Sensor	
	X	Light Sensor
	X	Presence Sensor
	Blink	
	Swap Address	
	Bank 0 - Info	
	Bank 2 - Configuration Parameters	
	GTIN	

3.3- Groups

The groups in a DALI system allow to create a set of outputs (lamps) that must all be controlled in the same way; there are 16 groups available in a DALI system.

The D-SERVER system works exclusively on groups, therefore this step is important and necessary. Suppose you have a system of 4 lamps and have them named as in the left figure below; by selecting Groups from the main menu, you access a menu that lists the available groups and manage their properties, see figure on the right below.

Menu	Outputs	X
Outputs	CG1 Lamp 1 Off.1	
Inputs	CG2 Lamp 1 Off.2	
Groups	CG3 Lamp 2 Off.1	
Commands	CG4 Lamp 2 Off.2	
Rooms	CG5 Output 5	
Scheduler	CG6 Output 6	
Localize	CG7 Output 7	
	CG8 Output 8	
System	CG9 Output 9	

Menu	Groups	Configuration G1	X
Outputs	G1 Group Off.1	Name Group Off.1	
Inputs	G2 Group Off.2	Switch All Off	
Groups	G3 Group 3	Group On	
Commands	G4 Group 4	Group Off	
Rooms	G5 Group 5	Group Regulation	
Scheduler	G6 Group 6	Set Fade Time	
Localize	G7 Group 7	Remote Control	
System	G8 Group 8		
	G9 Group 9	Program Group	
	G10 Group 10	Bus Failure Last value	
	G11 Group 11	Power ON Last value	
	G12 Group 12	Power on DLCP No action	
	G13 Group 13		
	G14 Group 14	Max Level 100	
	G15 Group 15	Min Level 0	
		X 1: Lamp 1 Off.1	
		2: Lamp 1 Off.2	
		X 3: Lamp 2 Off.1	
		4: Lamp 2 Off.2	

The configuration menu of each group allows to:

- assign a name to the group
- turn off ALL the lamps in the system
- turn on the lamps of that group (of course after the desired lamps have been assigned)
- turn off the lamps of that group (of course after the desired lamps have been assigned)
- adjust the level (dimming) of that group using the slider that appears
- set a fade time (ramp)
- control from a different D-SERVER control unit the value that group must assume (see chapter concerning data sharing between D-SERVERs); in other words link the level of that group to a value (Alx) of a remote node (Nx)
- program the group: assign the selected lamps to that group (this operation must be done after choosing the lamps to be assigned to the group)
- set the level that the lamps of that group must assume in the event of a DALI bus failure, to be chosen between 0 and 100% and last value
- set the level that the lamps of that group must assume in the event of an interruption and subsequent return of the mains voltage, to be chosen between 0 and 100% and the last value before the interruption
- set the level that the lamps of that group must assume at D-SERVER power on
- set the max level for that group
- set the min level for that group
- choose (an X symbol appears) the lamps among all those defined in the Lamps menu; each time you click on a lamp, it turns on when the X appears and turns off when you remove it, thus allowing you to identify and choose the lamps that must belong to the group. The lamps already assigned to a group will be shown in gray color, but they can be anyway assigned to other groups

Once the lamps that must belong to the group have been chosen and the System Failure and Power Up values have been set, click on Program to transfer the chosen.

3.4- Commands

The Commands are substantially virtual points of digital type in the D-SERVER memory; these points are fundamental for programming the logic of the D-SERVER controller. In the following we will refer to the commands with the abbreviation Cx. All "physical" digital inputs (e.g. buttons, switches, presence sensors, etc.) used in programming must be in the form of commands. This means that it is not allowed to use a button or switch input in a "direct" way in the definition of a logic (as it will be described later); this may seem a complication but in reality it allows to realize relatively complex logics in an extremely simple way, being able to define logic equations that link various inputs in the desired way. Up to 64 Commands are available for each D-SERVER.

If a button is to be used in a Room logic, this must be "converted" to Cx; from the main menu select Commands, then C1:

Menu	Commands	Configuration Command 1	X
Outputs	C1	Command 1	Name
Inputs	C2	Command 2	Type
Groups	C3	Command 3	Equation
Commands	C4	Command 4	
Rooms	C5	Command 5	
Scheduler	C6	Command 6	
Localize	C7	Command 7	
System	C8	Command 8	
	C9	Command 9	

A menu will be shown where it is possible to assign a name, for example "P1 Off.1" (Off. Stays for Office). It is then necessary to select the type of logic, therefore click on Type and then select the desired Logic (e.g. Series and Parallel):

Menu	Commands	Configuration Command 1	X
Outputs	C1	P1Off. 1	Name P1Off. 1
Inputs	C2	Command 2	Type
Groups	C3	Command 3	Equation
Commands	C4	Command 4	Equation Type P1Off. 1
Rooms	C5	Command 5	None
Scheduler	C6	Command 6	Logic (Series e Parallel)
Localize	C7	Command 7	Toggle
System	C8	Command 8	Threshold
	C9	Command 9	

At this point the Cx configuration menu changes like in the following figure:

Menu	Commands	Configuration P1 Off.1	X
Outputs	C1	P1 Off.1	Name P1 Off.1
Inputs	C2	Consent 2	Type Logic Equation
Groups	C3	Consent 3	Equation
Commands	C4	Consent 4	Add Series (AND - '&')
Rooms	C5	Consent 5	Add Parallel (OR - ' ')
Scheduler	C6	Consent 6	P1.1 PO1-1
Localize	C7	Consent 7	P1.2 PO1-2
System	C8	Consent 8	P1.3 PO1-3
	C9	Consent 9	P1.4 PO1-4
	C10	Consent 10	P2.1 P2.1
	C11	Consent 11	P2.2 P2.2
	C12	Consent 12	P2.3 P2.3
	C13	Consent 13	P2.4 P2.4
	C14	Consent 14	P3.1 P3.1
	C15	Consent 15	P3.2 P3.2
	C16	Consent 16	P3.3 P3.3
	C17	Consent 17	P3.4 P3.4
	C18	Consent 18	C1 P1 Off.1
	C19	Consent 19	F1 Daytime
	C20	Consent 20	F2 From Sunrise to Sunset
	C21	Consent 21	Nx.y Remote Point

In the lower side of the C1 configuration menu there is the list of digital points that have been previously found and defined, including the Cx themselves; by clicking on one of these points, it will be inserted in the Equation row. For example, clicking on PO1-1 or P1.1, P1.1 will be inserted in the Equation row; in this way the C1 command, called P1 Off.1, will be the "copy" of button P1.1.

Now suppose that you want to define a Cx that is the "virtual" parallel of 3 buttons, for example to dim a light from 3 different points; in this case sequentially click:

P1.1 > Add Parallel > P2.1 > Add Parallel > P3.1

The final result will be the one shown in the following figure:

Menu	Commands	Configuration P1 Off.1	X
Outputs	C1 P1 Off.1	Name P1 Off.1	
Inputs	C2 Consent 2	Type Logic Equation	
Groups	C3 Consent 3	Equation P1.2 P2.1 P3.1	
Commands	C4 Consent 4	Add Series (AND - '&')	
Rooms	C5 Consent 5	Add Parallel (OR - ' ')	
Scheduler	C6 Consent 6	P1.1 PO1-1	
Localize	C7 Consent 7	P1.2 PO1-2	
System	C8 Consent 8	P1.3 PO1-3	
	C9 Consent 9	P1.4 PO1-4	
	C10 Consent 10	P2.1 P2.1	
	C11 Consent 11	P2.2 P2.2	
	C12 Consent 12	P2.3 P2.3	
	C13 Consent 13	P2.4 P2.4	
	C14 Consent 14	P3.1 P3.1	
	C15 Consent 15	P3.2 P3.2	
	C16 Consent 16	P3.3 P3.3	
	C17 Consent 17	P3.4 P3.4	
	C18 Consent 18	C1 P1 Off.1	
	C19 Consent 19	F1 Daytime	
	C20 Consent 20	F2 From Sunrise to Sunset	
	C21 Consent 21	Nx.y Remote Point	

This explains why what may seem like a complication, actually allows to simplify the subsequent steps that will be seen in the next paragraphs, when it is required to realize even relatively complex logic that use Series and Parallel (OR and AND).

Another type of available function is Toggle, which allows to switch the Cx status at each OFF-ON variation of the specified points (e.g. each time one or more buttons is pressed). For the example in the following figure click in sequence:

Toggle > P1.2 > Add term > Toggle > P1.3 > Add Term > Reset > P3.3

Menu	Commands	Configuration Twilight	X
Outputs	C1 P1 Off.1		
Inputs	C2 P1 Off.2	Name Tog Off.3	
Groups	C3 Tog Off.3	Type Toggle Equation	
Commands	C4 Consent 4	Equation T[P1.2] T[P1.3] R[P3.3]	
Rooms	C5 Consent 5	Add term (OR - ' ')	
Scheduler	C6 Consent 6	Toggle	
Localize	C7 Consent 7	Set	
System	C8 Consent 8	Reset	
	C9 Consent 9		

The term Reset forces C3 to zero and, in a similar way, the term Set forces it to 1; it is possible to have more terms T, R and S.

The other possible type of equation is the Threshold; for example with this function it is possible, starting from a light sensor, to define a digital point that is activated when the light level is lower than a desired value, thus creating, in a simple way, a twilight switch. When the Threshold Type is selected, only the light sensors will be listed: click on the desired sensor, then on ">" or "<" and finally Add Value. The result will be as shown in the following figure.

Commands	X
C1 P1 Off.1	
C2 P1 Off.2	
C3 Tog Off.3	
C4 Twilight	
C5 Consent 5	
C6 Consent 6	
C7 Consent 7	
C8 Consent 8	

Configuration Consent 4	X
Name Twilight	
Type	Equation Type Twilight
Equation	None
	Logic (Series e Parallel)
	Toggle
	Threshold

Commands	X
C1 P1 Off.1	
C2 P1 Off.2	
C3 Tog Off.3	
C4 Twilight	
C5 Consent 5	
C6 Consent 6	
C7 Consent 7	
C8 Consent 8	
C9 Consent 9	
C10 Consent 10	
C11 Consent 11	

Configuration Consent 4	X
Name Twilight	Twilight
Type	Threshold Equation
Equation	S4 < 200
	Add Higher (>)
	Add Lower (<)
	Add Value
S4	SE 4

Both for the Logic and Toggle and Threshold functions, it is possible to edit manually by clicking on the line and inserting allowed characters; in case of an error, the equation line will be red.

Note: To find out how a button has been addressed by the system, the “Acquire Inputs” function in the System menu is very useful, see the related paragraph.

3.5- Rooms

The programming logic of the D-SERVER controller is basically organized by rooms. A room is an area to which, in first instance, one or more groups of lamps, sensors and push-button panels are assigned; the various functionalities of the components included in a given room are then used into scenes that will be described later. Each D-SERVER controller can manage up to 16 rooms and each room can provide up to 8 scenes.

Selecting Rooms from the main menu of D-SETUP the related list will be shown:

Menu	Rooms	X
Outputs	A1 Room 1	
Inputs	A2 Room 2	
Groups	A3 Room 3	
Commands	A4 Room 4	
Rooms	A5 Room 5	
Scheduler	A6 Room 6	
Localize	A7 Room 7	
System	A8 Room 8	
	A9 Room 9	
	A10 Room 10	
	A11 Room 11	
	A12 Room 12	
	A13 Room 13	
	A14 Room 14	
	A15 Room 15	
	A16 Room 16	

Menu	Rooms	Configuration A1	X
Outputs	A1 Office 1	Name Office 1	
Inputs	A2 Room 2	Delete Room	
Groups	A3 Room 3	Groups	
Commands	A4 Room 4	Light Sensor	
Rooms	A5 Room 5	Presence Sensor	
Scheduler	A6 Room 6	Scenes	
Localize	A7 Room 7		
System	A8 Room 8		
	A9 Room 9		
	A10 Room 10		
	A11 Room 11		
	A12 Room 12		
	A13 Room 13		
	A14 Room 14		
	A15 Room 15		
	A16 Room 16		

The configuration menu of each room allows to:

- assign a name to the room
- remove the room
- choose the groups that should be part of it
- determine if there should be a light sensor and if so which one
- establish if there must be one or more presence sensors and if so which ones
- define the scenes controlling that room

Groups in the room:

Configuration A1	Groups in A1	X
Name Office 1	Group Off.1	X
Delete Room	Group Off.2	
Groups		
Light Sensor		
Presence Sensor		
Scenes		

Light sensor and presence sensors in the room: the light sensor (for the automatic regulation of the brightness level) can be only one while the presence sensors can be more than one, in which case they work in parallel:

Configuration A1		Light Sensor for A1		X
Name	Office 1	SE 4	500, 5sec, 100%	
Delete Room				
Groups				
Light Sensor				
Presence Sensor				
Scenes				

Configuration A1		Presence Sensors for A1		X
Name	Office 1	SE 4		X
Delete Room				
Groups				
Light Sensor				
Presence Sensor				
Scenes				

In the case of a light sensor for automatic regulation, two further parameters can be defined:

- Light Max (500 in previous figure): it is the brightness level read by the sensor when the lights involved in the room are at 100% (in conditions of absence of light from the outside); this value is important for the goodness of the regulation of the luminous flux
- Period (5sec in previous figure): establishes how often the control algorithm calculates the optimal value to be sent to the lamps based on the set point; the default value 5s is generally suitable for most cases, so it is recommended to leave it unchanged
- Weight (100% in previous figure): it is the percentage "weight" assigned to the sensor; if there are several light sensors in a room and the light regulation has to be made considering a "mix" of the values detected by them, then specify the sensors to be used and the assigned percentage (the sum must be 100%, see figure on the right below)

Configuration A1		Light Sensor for A1		X
Name	Office 1	SE 4	500, 5sec, 100%	
Delete Room				
Groups				
Light Sensor				
Presence Sensor				
Scenes				

Configuration A1		Light Sensor for A1		X
Name	Office 1	SE 4	500, 5sec, 40%	
Delete Room				
Groups		SE5	500, 5sec, 25%	
Light Sensor				
Presence Sensor		SE6	500, 5sec, 35%	
Scenes				

3.5.1- Scenes

By selecting Scenes from the configuration menu of each room, the list of scenes will be shown.

Menu	Rooms	Configuration A1	Scenes in A1	X
Outputs	A1 Office 1	Name Office 1	S1 Scene 1	
Inputs	A2 Room 2	Delete Room	S2 Scene 2	
Groups	A3 Room 3	Groups	S3 Scene 3	
Commands	A4 Room 4	Light Sensor	S4 Scene 4	
Rooms	A5 Room 5	Presence Sensor	S5 Scene 5	
Scheduler	A6 Room 6	Scenes	S6 Scene 6	
Localize	A7 Room 7		S7 Scene 7	
System	A8 Room 8		S8 Scene 8	
	A9 Room 9			
	A10 Room 10			
	A11 Room 11			
	A12 Room 12			
	A13 Room 13			
	A14 Room 14			
	A15 Room 15			
	A16 Room 16			

The configuration menu of each scene allows to:

- assign a name to the scene
- delete the scene
- define whether the scene is recalled by a Cx and, if so, which one
- set the setpoint if the scene provides the automatic brightness regulation
- set the delay time after which the scene switches to the "Deactivation" status
- see the list of groups in that room and set further options for each of them

Scenes in the room:

Configuration A1		Scenes in A1		X	Configuration A1		Scenes in A1		Configuration S1 in A1		X
Name	Office 1	S1	Scene 1		Name	Office 1	S1	AUTO Regulation	Name	AUTO Regulation	
Delete Room		S2	Scene 2		Delete Room		S2	Scene 2	Delete scene		
Groups		S3	Scene 3		Groups		S3	Scene 3	Recall from		
Light Sensor		S4	Scene 4		Light Sensor		S4	Scene 4	Regulat. SetPoint	0	
Presence Sensor		S5	Scene 5		Presence Sensor		S5	Scene 5	Deact. Delay	0	
Scenes		S6	Scene 6		Scenes		S6	Scene 6			Group Off.1
		S7	Scene 7				S7	Scene 7			
		S8	Scene 8				S8	Scene 8			

The next level of the configuration menu of a scene is dynamically variable according to the options that are selected from time to time, therefore the following examples are possible cases.

In first instance, suppose you want to create a scene for automatic brightness regulation; for each group previously assigned to a given room it is possible to decide:

Configuration A1		Scenes in A1		Configuration S1 in A1		Control Group Off.1 in S1		X
Name	Office 1	S1	AUTO Regulation	Name	AUTO R	Activate by Presence	X	
Delete Room		S2	Scene 2	Delete scene		Deactivate by Presence	X	
Groups		S3	Scene 3	Recall from		Regulation	X	
Light Sensor		S4	Scene 4	Regulat. SetPoint	0	Regulation Offset	0	
Presence Sensor		S5	Scene 5	Deact. Delay	0	Dimming by Command	P1 Off.1	
Scenes		S6	Scene 6	PRD 0	Group O	Time Slot		
		S7	Scene 7			Consent by Command		
		S8	Scene 8					

- if the scene must be activated (also or only) by the presence sensors assigned to that room
- if the scene must be deactivated (also or only) by the presence sensors defined for that room, with a delay defined at the previous level of the menu (Deactivation delay)
- if the scene is an automatic brightness regulation
- the offset in the output light level in % (if the regulator calculates 60% and the offset is -10, then 50% will be sent to that group)
- a possible dimming command (the local button with one-touch function)
- an activation time slot (scheduler, see in the following of this manual)
- a possible consent: see next step

Now suppose you want to refine the same scene by adding a consent, which can be a Cx controlled by a supervisor or a point controlled by a time slot; the regulation must be activated when the consent is active, while with deactivated consent the lamps must be always off. A Cx named for example "Enable AUTO" is defined and entered as "Consent by Command" in the group control, specifying a value (or level) of zero when the Cx becomes OFF (so that when the consent falls, the lights turn off) and no level when the Cx turns ON (so that the lights are controlled by the current situation). The following figure shows the new configuration.

Configuration A1		Scenes in A1		Configuration S1 in A1		Control Group Off.1 in S1		X
Name	Office 1	S1	AUTO Regulation	Name	AUTO R	Activate by Presence	X	
Delete Room		S2	Scene 2	Delete scene		Deactivate by Presence	X	
Groups		S3	Scene 3	Recall from		Regulation	X	
Light Sensor		S4	Scene 4	Regulat. SetPoint	0	Regulation Offset	0	
Presence Sensor		S5	Scene 5	Deact. Delay	0	Dimming by Command	P1 Off.1	
Scenes		S6	Scene 6	PRDC 0	Group O	Time Slot		
		S7	Scene 7			Consent by Command	Enable AUTO	
		S8	Scene 8			Command On Value		
						Command Off Value	0	

Compared to the previous configuration, the last level of the menu has been extended with:

- a level at the activation of the consent, that is the value 0..100% to be sent to the lamps when the consent is activated; if a value is not specified, the situation remains unchanged
- a level at the deactivation of the consent, that is the value 0..100% to be sent to the lamps when the consent is deactivated; if a value is not specified, the situation remains unchanged

Returning to the previous menu level, since the automatic regulation and the control by presence sensor have been enabled, a setpoint value and a deactivation delay must be entered:

Configuration A1		Scenes in A1		Configuration S1 in A		Deactivation Delay Setting		X
Name	Office 1	S1	AUTO Regulation	Name	AUTO R	without warning		
Delete Room		S2	Scene 2	Delete scene		with warning		
Groups		S3	Scene 3	Recall from				
Light Sensor		S4	Scene 4	Regulat. SetPoint	450			
Presence Sensor		S5	Scene 5	Deact. Delay	10 min			
Scenes		S6	Scene 6	PRDC 0	Group Off.1			
		S7	Scene 7					
		S8	Scene 8					

As soon as you have entered the delay, you are asked to choose between "without warning" and "with warning": in the second case, when the delay expires, the light level does not go to zero immediately, but it is reduced to warn that the light is about to go out; if no further movements are detected by the sensor, the light will switch off completely shortly, otherwise the automatic adjustment will restart.

Now suppose that for Office 2 you want a button that performs dimming (with a short press function, also called one-touch) and 3 other buttons to turn off, turn on at 100% and set the light to 50%; in the room Office 2, 4 scenarios will be created, the first of which will be set as follows:

Rooms		Configuration A2		Scenes in A2		Configuration S1 in A		Control Group Off.2 in S1		X
A1	Office 1	Name	Office 2	S1	Dimm	Name	Dimm	Dimming by Command	P1 Off.2	
A2	Office 2	Delete Room		S2	Off.2 OFF	Delete scene		Time Slot		
A3	Outdoor Lamps	Groups		S3	Off.2 ON	Recall from		Consent by Command		
A4	Room 4	Light Sensor		S4	Off.2 50%	Regulat. SetPoint	0			
A5	Room 5	Presence Sensor		S5	Scene 5	Deact. Delay	0			
A6	Room 6	Scenes		S6	Scene 6	D	Group Off.2			
A7	Room 7			S7	Scene 7					
A8	Room 8			S8	Scene 8					

The scenes for switching off and on at 100% will be set as follows:

Configuration S2 in A		Control Group Off.2 in S2		X	Configuration S3 in A		Control Group Off.2 in S3		X
Name	Off.2 OFF	Activation Value	0		Name	Off.2 ON	Activation Value	100	
Delete scene		Deactivation Value			Delete scene		Deactivation Value		
Recall from	P2 Off.2	Dimming by Command			Recall from	P3 Off.2	Dimming by Command		
Regulat. SetPoint	0	Time Slot			Regulat. SetPoint	0	Time Slot		
Deact. Delay	0	Consent by Command			Deact. Delay	0	Consent by Command		
	Group Off.2					Group Off.2			

And finally the scene for 50%:

Configuration S4 in A		Control Group Off.2 in S4		X
Name	Off.2 50%	Activation Value	50	
Delete scene		Deactivation Value		
Recall from	P4 Off.4	Dimming by Command		
Regulat. SetPoint	0	Time Slot		
Deact. Delay	0	Consent by Command		
	Group Off.2			

Note that in all 3 cases the Activation Value has been defined and that this value is recalled from the point entered in "Recall from"; the Deactivation Level is instead left on "No action". This is because the recall of a scene works on the OFF to ON variation of a digital point, while the opposite ON to OFF variation is ignored (therefore, in these cases, any value entered in Deactivation Value will be ignored), unless a time has been defined in "Deactivation Delay", in which case the Deactivation Value will be recalled at the end of this time (think, for example, to the classic staircase light logic with switch on by button and delayed switch off).

Now suppose you want to turn on the outdoor lights at sunset and turn them off the next morning at sunrise. If you decide to use a light sensor and the threshold function, you can use on the "Twilight" point previously defined as $S4 < 200$ (C3 command):

Commands		X	
C1	P1 Off.1		
C2	P1 Off.2	Configuration Twilight	
C3	Twilight	Name	Twilight
C4	Enable AUTO	Type	Threshold Equation
C5	P2 Off.2	Equation	S4 < 200
C6	P3 Off.2		Add Higher (>)
C7	P4 Off.4		Add Lower (<)
C8	Consent 8		Add Value
C9	Consent 9	S4	SE 4
C10	Consent 10	G1	Group Off.1
C11	Consent 11	G2	Group Off.2
C12	Consent 12	G3	Outdoor lamps

This command must therefore set the lights to 100% when it is activated and to 0% when it is deactivated; this logic is performed by setting like in the following figure.

Configuration A3		Scenes in A3		Configuration S1 in A		Control Outdoor lamps in S1		X
Name	Outdoor Lamps	S1	AUTO	Name	AUTO	Dimming by Command		
Delete Room		S2	Scene 2	Delete scene		Time Slot		
Groups		S3	Scene 3	Recall from		Consent by Command	Twilight	
Light Sensor		S4	Scene 4	Regulat. SetPoint	0	Command On Value	100	
Presence Sensor		S5	Scene 5	Deact. Delay	0	Command Off Value	0	
Scenes		S6	Scene 6	C 100	Outdoor			
		S7	Scene 7					
		S8	Scene 8					

The same performance can be obtained by using the Sunrise and Sunset function of the clock integrated in D-SERVER, as shown in the following figure.

Configuration A3		Scenes in A3		Configuration S1 in A		Control Outdoor lamps in S1		X
Name	Outdoor Lamps	S1	AUTO	Name	AUTO	Activation Value	0	
Delete Room		S2	Scene 2	Delete scene		Deactivation Value	100	
Groups		S3	Scene 3	Recall from		Dimming by Command		
Light Sensor		S4	Scene 4	Regulat. SetPoint	0	Time Slot	'From Sunrise to Sunset' active	
Presence Sensor		S5	Scene 5	Deact. Delay	0	Consent by Command		
Scenes		S6	Scene 6	F 0	Outdoor			
		S7	Scene 7					
		S8	Scene 8					

Where the point "From Sunrise to Sunset" has been defined as time slot in the following way:

Menu	Scheduler	Setting F2	X
Outputs	Date and Time Setting	Name	From Sunrise to Sunset
Inputs	Open File	Read from DLCP	
Groups	Save File	Write to DLCP	
Commands	F1 Daytime	Monday	
Rooms	F2 From Sunrise to Sun	X	Sunrise - Sunset
Scheduler	F3 Slot 3		00:00 - 24:00
Localize	F4 Slot 4		00:00 - 24:00
System	F5 Slot 5		00:00 - 24:00
	F6 Slot 6	Tuesday	Copy from Monday
	F7 Slot 7	X	Sunrise - Sunset

Note that at the activation of the point "From sunrise to sunset" the lamps will be switched off (sunrise) and at the deactivation of the same point the lamps will be switched on (sunset).

3.6- Scheduler

The D-SERVER D-SERVER controller features an internal clock with a rechargeable battery in order to keep the time even in power supply failure condition.

Selecting Clock from the main menu of D-SETUP the related menu will be shown:

Menu	Scheduler	X
Outputs	Date and Time Setting	
Inputs	Open File	
Groups	Save File	
Commands	F1 Slot 1	
Rooms	F2 Slot 2	
Scheduler	F3 Slot 3	
Localize	F4 Slot 4	
System	F5 Slot 5	
	F6 Slot 6	
	F7 Slot 7	
	F8 Slot 8	
	F9 Slot 9	
	F10 Slot 10	
	F11 Slot 11	
	F12 Slot 12	
	F13 Slot 13	
	F14 Slot 14	
	F15 Slot 15	
	F16 Slot 16	

By clicking on Date and Time Setting it is possible to read and write the D-SERVER clock; to set a time/date click on the various fields and select the desired value, at the end click on Send to D-SERVER.

Menu	Scheduler	Date and Time Setting	X
Outputs	Date and Time Setting	Read from DLCP	
Inputs	Open File	Write to DLCP	
Groups	Save File	HH	15
Commands	F1 Slot 1	MM	10
Rooms	F2 Slot 2	SS	45
Scheduler	F3 Slot 3	Day	Friday
Localize	F4 Slot 4	DD	17
System	F5 Slot 5	MM	June
	F6 Slot 6	YY	2022

The internal clock allows to create up to 16 weekly time slots to be used in the scene programming logic of the various rooms. To create a time slot click on one of the options F1..F16:

Scheduler		Setting F1		X
Date and Time Setting		None		
Open File		Read from DLCP		
Save File		Write to DLCP		
F1	Slot 1	Monday		
F2	Slot 2		00:00 - 24:00	
F3	Slot 3		00:00 - 24:00	
F4	Slot 4		00:00 - 24:00	
F5	Slot 5		00:00 - 24:00	
F6	Slot 6	Tuesday	Copy from Monday	
F7	Slot 7		00:00 - 24:00	
F8	Slot 8		00:00 - 24:00	
F9	Slot 9		00:00 - 24:00	
F10	Slot 10		00:00 - 24:00	
F11	Slot 11	Wednesday	Copy from Tuesday	

Enter a name to be assigned to a time slot and then enter/modify the activation/deactivation times of each slot. To be operational, each time slot must be enabled by clicking on the first column next to the corresponding time (the presence of an X indicates that that time slot is enabled).

It is possible to copy the times of one day of the week to the other ones by clicking on Copy from xx.

Warning: to transfer the defined time slots to D-SERVER, click on "Write to D-SERVER".

The Open File and Save File options in the Clock menu allow to read and save the time slot settings from/to a file; the file extension is .sch (scheduler).


The defined time slots can be used in the Cx if they have to be placed in logical combination with other points, or they can be used directly as consents in the scenarios in the Time Slot option.

3.7- Localize

The D-SERVER D-SERVER controller can calculate the sunrise and sunset times related to the position in which it has been installed; it is therefore needed to provide the coordinates of the location. From the main menu of D-SETUP select Localizing: the current settings of Longitude, Latitude and time zone will be shown.

Menu	Localize		X
Outputs	Longitude	09° 11' 19" E	
Inputs	Latitude	45° 27' 49" N	
Groups	Time Zone	+1	
Commands	Sunrise Correction	0 min	
Rooms	Sunset Correction	0 min	
Scheduler	Get from map (by internet)		
System			

To change the settings, act on each individual item or, if an Internet connection is available, select Get from map; a map will be shown on which it is possible to indicate the desired position and the coordinates will be automatically updated.

Menu	Localize	Localization	X
Outputs	Longitude	09° 11' 1	
Inputs	Latitude	45° 27' 4	
Groups	Time Zone	+1	
Commands	Sunrise Correction	0 min	
Rooms	Sunset Correction	0 min	
Scheduler	Get from map (by internet)		
Localize			
System			

The two options Sunrise Correction and Sunset Correction allow to anticipate or postpone the activation and deactivation of the sunrise and sunset points by up to 60 minutes with respect to the calculated times. The Sunrise and Sunset points (with possible correction as mentioned) can then be used in the time slots described in the previous paragraph.

3.8- System

The System menu allows several functions, some of which have already been seen in the previous paragraphs. The allowed functions are listed below.

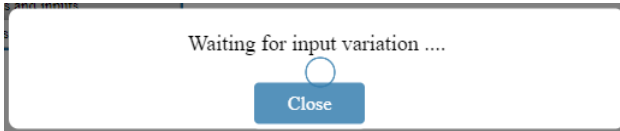
Menu	System	X
Outputs	Node ID DLCP	
Inputs	Net sharing	
Groups	Acquire inputs	
Commands	Switch all on	
Rooms	Switch all off	
Scheduler	Reset DALI field	
Localize	Check and repair addresses	
System	Reconfigure outputs and inputs	
	Read outputs values	

3.8.1- Net Sharing

If the D-SERVER controller needs to “publish” on the Eth network some of the information related to its bus, it will be necessary to set the corresponding parameters “Node ID” and “Net sharing”. For more details see chapter on data sharing between D-SERVER controllers.

3.8.2- Acquire Inputs

Identify Inputs: by clicking on this option, the system starts “listening”, waiting for a button to be pressed in the field; this allows you to identify the address (SA) and point of the button, redirecting to the D-SETUP menu “Control Devices” → “Device Configuration”. If no button is pressed, the function will automatically deactivate after 10 seconds.



3.8.3- Switch all on / Switch all off

This two functions allow to switch on/off all the outputs connected to DALI bus; a confirmation will be required before to execute the command.

3.8.4- Reset DALI field

This function totally resets the DALI field, resetting the factory configuration of the CGs and CDs, removing the SAs and then addressing again all discovered devices. Take in account that that if the devices in the field are already addressed, this procedure will address them again and the final situation of the SAs will be probably different from the initial one. At the end of the procedure, the Lamps and Control Devices menus will show the found CGs and CDs.

3.8.5- Check and repair addresses

This function activates a procedure that can be used when adding a CG or a CD, without SA, and wanting to address it without changing the address of the other devices. In addition, this procedure detects any duplicate addresses and fixes them.

In detail, a scan of the DALI field is performed to detect which addresses are present (both CG and CD), if there are devices with double SA or others without SA, in which case the addresses will be fixed; finally, some operating parameters of the connected devices are reprogrammed.

3.8.6- Reconfigure outputs and inputs

Send configuration commands to the CGs and CDs, useful for example if a device has been connected after switching on D-SERVER or in all cases where there is a doubt that one or more devices have not been configured as desired.

3.8.7- Read output values

D-SERVER performs the polling of the CGs (Lamps) to read the current level. This allows to align, if not, the real levels of the lamps with the virtual map of the field in D-SERVER.

3- D-SERVERVisio

3.1- Description



D-SETUP features a window that displays the virtual “map” of the field, then CG levels, digital input states (buttons, motion and presence sensors, switches, consents) and analog values of the light sensors. Click on the Visio button of D-SETUP.

DLCP Tools - 1.00.00

Open File		Get field	Read DLCP
Save File	Visio	User Interface	Write DLCP

A new browser tab will be opened containing the D-SERVERVisio window as shown in the figure on the next page.

Some selectors in the upper side of the window allow to show or hide the related section.

- **Outputs:** the current output level 0..100% of each CG detected; if no value is shown, it means that CG has not been detected by D-SERVER controller. The selector at the top right of the Lamps section allows to switch the display between Levels and Hours of operation of each CG. By clicking in the box showing the value it is possible to adjust the output level using the slider that appears 
- **Groups:** reports the current output level 0..100% of each group. By clicking in the box showing the value it is possible to adjust the output level using the slider that appears 
- **Light Sensors:** reports the current brightness value measured by each detected light sensor; if some value are not displayed it means that CD has not been detected by D-SERVER.
- **Inputs/Presence:** the status of the digital input or presence sensor is shown. In the case of push-button or switch interface (DL4PB or DL4SW) each of the 4 points displayed corresponds to an input of the device (I4-I3-I2-I1 starting from the left). In the case of a presence sensor, the rightmost point shows the current status of the detector
- **Commands:** the status of the related Command (Cx) is shown; if the definition of Cx allows it (in practice if an equation that controls it has not been entered), it is possible to activate and deactivate the point by clicking on it (it could be a supervisor who controls these points)
- **Automatic Regulation:** status of Automatic Regulation; 16 small boxes are indicated for each “room.scene”, each one related to one of the possible 16 groups included in that scene. A colored box indicates that the group of that scenario in that environment is in automatic light regulation
- **Setpoint:** for each scenario of each room, the current set point of the automatic light regulation is shown (if configured); click in the box to set a new value
- **Deactivation Time (sec):** they are the deactivation times, that is to say the delays related to the presence sensors or to timed scenes. There are 8 boxes (one for Scene) for each of the 16 Rooms; the notation 5.7, for example, means that that box shows the value of the timer assigned to scene 7 of room 5 (provided that a timer has been assigned to that scene of that room). In the case of a presence sensor, as long as the sensor detects a presence, the related box in the Times section is empty; when the presence is no longer detected, the value corresponding to the delay (in seconds) appears in the box and begins to decrease; when it reaches zero, it is assumed that the zone relating to that sensor has become vacant. If instead, during the time decreasing the sensor detects a new presence, the related box becomes empty again
- **Deactivation Delay (sec):** they are the settings of the deactivation delays of each room.scene; if the box is empty it means that the related room.scene does not have a presence sensor, otherwise the current setting is shown in seconds. By clicking in the box, it is possible to set a new value
- **Schedulers:** they show the status related to the 16 time slots

DLCP Visio - 1.00.00

Outputs							
1	12	2	12	3	12	4	12
5		6		7		8	
9		10		11		12	
13		14		15		16	
17		18		19		20	
21		22		23		24	
25		26		27		28	
29		30		31		32	
33		34		35		36	
37		38		39		40	
41		42		43		44	
45		46		47		48	
49		50		51		52	
53		54		55		56	
57		58		59		60	
61		62		63		64	

Groups							
1	12	2	0	3	0	4	0
5		6		7		8	
9	0	10	0	11	0	12	0
13		14		15		16	
17		18		19		20	
21		22		23		24	
25		26		27		28	
29		30		31		32	
33		34		35		36	
37		38		39		40	
41		42		43		44	
45		46		47		48	
49		50		51		52	
53		54		55		56	
57		58		59		60	
61		62		63		64	

Light Sensors							
1	303	2		3		4	
5		6		7		8	
9		10		11		12	
13		14		15		16	
17		18		19		20	
21		22		23		24	
25		26		27		28	
29		30		31		32	
33		34		35		36	
37		38		39		40	
41		42		43		44	
45		46		47		48	
49		50		51		52	
53		54		55		56	
57		58		59		60	
61		62		63		64	

Inputs/Presences							
1		2		3		4	
5		6		7		8	
9		10		11		12	
13		14		15		16	
17		18		19		20	
21		22		23		24	
25		26		27		28	
29		30		31		32	
33		34		35		36	
37		38		39		40	
41		42		43		44	
45		46		47		48	
49		50		51		52	
53		54		55		56	
57		58		59		60	
61		62		63		64	

3.2- Diagnostics

In D-SERVER Visio, the background color of the various boxes relating to Outputs, Groups, Light Sensors and Inputs/Presences have a diagnostic meaning as follows:

- light blue: not configured
- red: not responding to polling (e.g. a CG or a CD not connected to the bus)
- orange: failure (only for CGs, e.g. blown lamp)
- green: point activated (only for CD, e.g. presence sensor or switch)

4- Report

4.1- Description

D-SETUP can generate reports of:

- Inputs (Control Devices)
- Groups
- Commands
- Rooms
- Sharing

To access it, select one of the items listed above and then click on the related Report, see example in the following figure.

DLCP Tools - 1.00.00

Open File	Rooms Report	Get field	Read DLCP
Save File	Visio	User Interface	Write DLCP

4.2- Inputs Report

Select Control Devices and then click on Report on the top menu. A new browser window will open containing the list of CDs and the corresponding assigned name, and further details on the input points. The following figure is an example of a CD report:

Inputs Report

Input	Name	Type	Details
CD1	Keypad Off.1	Push Button	PO1-1
			PO1-2
			PO1-3
			PO1-4
CD2	PB 2	Push Button	P2.1
			P2.2
			P2.3
			P2.4
CD3	PB 3	Push Button	P3.1
			P3.2
			P3.3
			P3.4
CD4	SE 4	Sensor	Luminosità + Presenza

4.3- Groups Report

Select Groups and then click Reports on the top menu. A new browser window will open containing the list of configured groups and the lamps that compose them. The following figure is an example of a Groups report:

Groups Report

	Group															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X															
2		X														
3	X															
4		X														
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
--																

4.4- Commands Report

Select Commands and then click Report on the top menu. A new browser window will open containing the list of configured Cx commands, the corresponding assigned name and the logic equation that controls each point (if not defined it means that the specific point is controlled, for example, by a supervisor). The following figure is an example of the Commands Report:

Commands Report

Command	Name	Equation
C1	P1 Off.1	P1.2 P2.1 P3.1
C2	P1 Off.2	
C3	Twilight	S4 < 200
C4	Enable AUTO	
C5	P2 Off.2	
C6	P3 Off.2	
C7	P4 Off.4	

4.5- Report of Rooms

Select Rooms and then click on Reports on the top menu. A new browser window will open containing the list of defined rooms. The following figure is an example of the Rooms report:

Room Report

Room	Scenes	Groups	Action		
A1	Office 1 Light Sensors: SE 4 (500, 5, 100) Presence Sensors: SE 4	AUTO Regulation Regulation Setpoint: 450 Deactivation delay: 10 min	Group Off.1	Activation / Deactivation by Presence	X / X
				Regulation / Offset	X / 0
				Activation / Deactivation Values	
				Dimming by Command	P1 Off.1
				Time slot	
				Consent by Command	Enable AUTO
A2	Office 2 Light Sensors:	Dimm Deactivation delay: 0	Group Off.2	Activation / Deactivation by Presence	
				Regulation / Offset	
				Activation / Deactivation Values	
				Dimming by Command	P1 Off.2
				Time slot	
				Consent by Command	
		Value for Command On / Off			
		Off.2 OFF Recall from P2 Off.2 Deactivation delay: 0	Group Off.2	Activation / Deactivation by Presence	
				Regulation / Offset	
				Activation / Deactivation Values	0 / -
				Dimming by Command	
				Time slot	
				Consent by Command	
		Off.2 ON Recall from P3 Off.2 Deactivation delay: 0	Group Off.2	Activation / Deactivation by Presence	
				Regulation / Offset	
				Activation / Deactivation Values	100 / -
				Dimming by Command	
				Time slot	
Consent by Command					
Off.2 50% Recall from P4 Off.4 Deactivation delay: 0	Group Off.2	Activation / Deactivation by Presence			
		Regulation / Offset			
		Activation / Deactivation Values	50 / -		
		Dimming by Command			
		Time slot			
		Consent by Command			
A3	Outdoor Lamps Light Sensors:	AUTO Deactivation delay: 0	Outdoor lamps	Activation / Deactivation by Presence	
				Regulation / Offset	
				Activation / Deactivation Values	0 / 100
				Dimming by Command	
				Time slot	' From Sunrise to Sunset active
				Consent by Command	
Value for Command On / Off					

The first column shows the room number, the second the name assigned to it and, if present, the light sensor and presence sensors.

The Scenes column shows, for each room, all the scenes that have been defined with the related information regarding the regulation setpoint (if a light regulation has been defined), the deactivation delay of that scene (in the case of a presence sensor or in any case of a delayed scene), the point that recalls that scene and so on.

The Groups column shows the name of the Groups that are part of that room (it can be one or more groups).

Finally, the Action column indicates the logic of each scene.

4.6- Sharing Report

Select System and then click Report on the top menu. A new browser window will open containing the list of available shares; for details on the meaning of sharing, refer to the specific Chapter. The following figure is an example of a Sharing report:

Net sharing Report

Node Number			
0			
ID	Type	Name	Share as
CD1.1	Push Button/Switch	PO1-1	DI N0.1
CD3.1	Push Button/Switch	P3.1	DI N0.2
C3	Command	Twilight	DI N0.3
F1	Time slot	Daytime	DI N0.4
			DI N0.5
			DI N0.6
			DI N0.7
			DI N0.8
			DI N0.9
			DI N0.10
			DI N0.11
			DI N0.12
			DI N0.13
			DI N0.14
			DI N0.15
			DI N0.16
G1	Group Value	Group Off.1	AI N0.1
			AI N0.2
			AI N0.3
			AI N0.4
			AI N0.5
			AI N0.6
			AI N0.7
			AI N0.8
			AI N0.9
			AI N0.10
			AI N0.11
			AI N0.12
			AI N0.13
			AI N0.14
			AI N0.15
			AI N0.16
			C 1
			C 2
			C 3
			C 4
			C 5
			C 6
			C 7

5- Data sharing between D-SERVER controllers

5.1- Description

Each D-SERVER allows you to “publish” on the Ethernet network some states and values of the devices connected to its bus; the other D-SERVERs connected to the same network can then use these “remote” points and publish their own. The maximum number of D-SERVERs that can publish their points on the network is 16. This does not mean that you cannot connect more than 16 D-SERVERs on the same network, but simply that a maximum of 16 of them can publish their points, while all the others they can use them.

In detail, the information that a D-SERVER can publish are:

- Push-buttons and switches (digital information)
- Commands (digital information)
- Time slots (digital information)
- Group values (Light level values sent to groups of CG, 0..100, analog information)

Group values can only be published as AI (Analog Input), up to a maximum of 16 values for each D-SERVER. The time slots can only be published as DI (Digital Input).

Buttons/Switches and Commands can instead be published in two different ways:

1. as DI: in this case only the status of the corresponding point can be transferred, therefore 0/1, OFF/ON
2. as Command: in this case it is possible to transfer not only the status 0/1 of the point, but also the “short press” and “long press” events which allow to perform specific functions on the receiving D-SERVER; pay attention that in this case the Cx published by a D-SERVER will be “copied” on the corresponding Cx of all the D-SERVERs on the network. This means that if a D-SERVER publishes point C1, all points C1 of all D-SERVERs in the network will be reserved to receive that information, therefore C1 cannot be used for other purposes.

Note 1: for the reasons just been said, it is recommended not to use the “Command” mode when not necessary as the fact of transferring a button as Cx, for example C1, means that the same C1 is reserved for this purpose on ALL the D-SERVERs Network; since 64 Cxs are available for each D-SERVER, it is easy to understand how improper use risks to expire them.

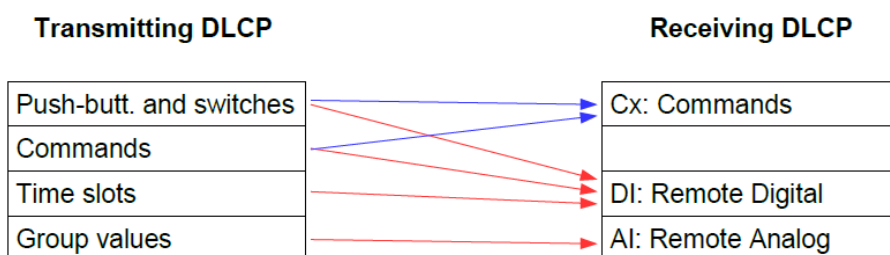
Nota 2: the terms “short press” and “long press”, in the DALI-2 terminology, have the following meaning:

-short press: a short press and subsequent release of a button; the time below which a pressure is “short” is typically 0.5s (this time can however be set via the DALI-2 bus)

-long press: pressing the button for longer time than the “short” threshold just described

For example, a button dims a light while holding it down and turns it on/off for short presses

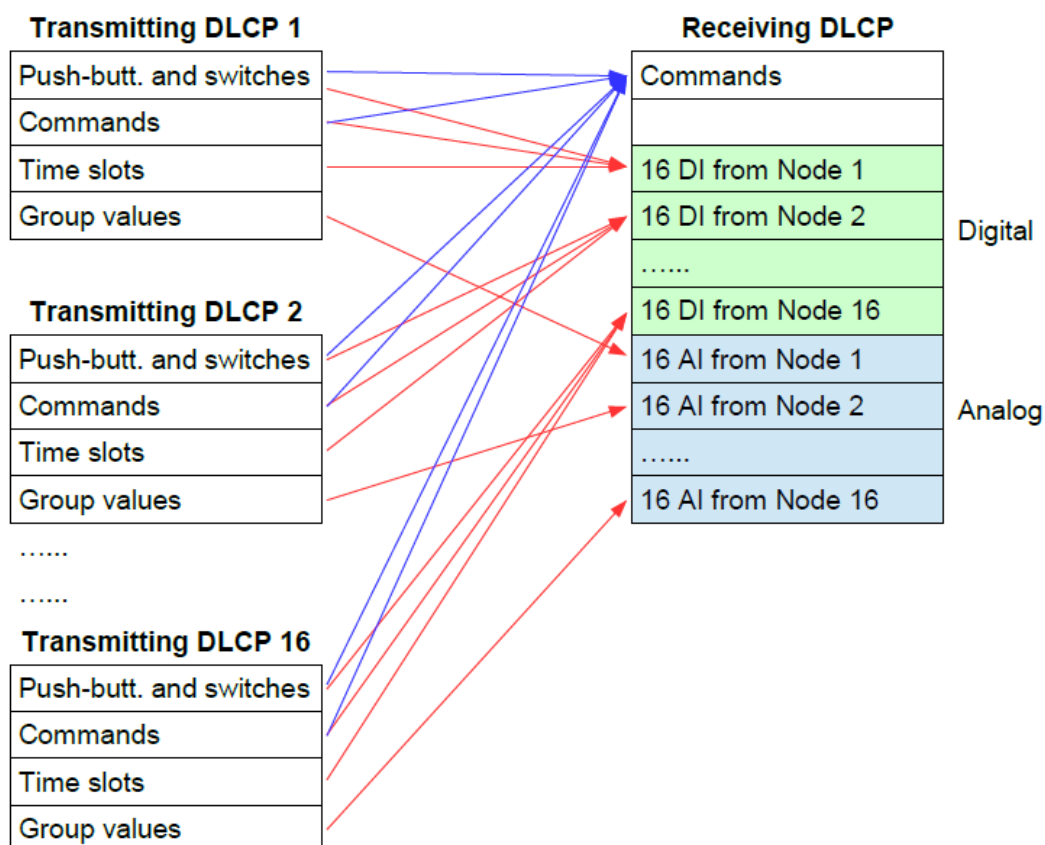
Therefore the information published by the “transmitting” D-SERVER will be stored by the “receiving” D-SERVERs in different areas of their memory. In detail, the situation is illustrated in the following figure:



So the choice of how to transfer a digital point can be summarized as follows:

- DI: if the digital point to be transferred is an ON/OFF state (for example a switch or a button that must not perform functions related to short press and long press)
- Command: if the digital point to be transferred is a button that must perform short press and long press functions

The following figure graphically explains how and where information is transferred in the various modes.



Each D-SERVER that publishes points on the network must be identified with a node number, while all others using these points do not need identification.

To assign a node number (from 1 to 16) to a D-SERVER controller select System from the main menu of D-SETUP; the Node ID entry allows you to assign a mnemonic name to that node. Then select Net Sharing:

Menu	System	Net sharing	X	
Outputs	Node ID	DLCP	Node Number	1
Inputs	Net sharing		Push buttons and Switches	
Groups	Acquire inputs		Commands	
Commands	Switch all on		Time slots	
Rooms	Switch all off		Group Value	
Scheduler	Reset DALI field			
Localize	Check and repair addresses			
System	Reconfigure outputs and inputs			
	Read outputs values			

Click on Node Number and choose the desired value (1 in the example) from the drop-down menu that appears; the value 0 means that D-SERVER controller does not publish points (but can use those of other D-SERVERS). Node numbers from 17 to 255 can be also assigned but only for D-SERVERS that do not have to publish information; in this case the node number (which is normally not necessary) identifies the D-SERVER in a ModBus TCP/IP network.

At this point, the digital and analog points to be published have to be chosen; it is possible to share:

- Push Buttons and Switches
- Commands
- Time slots
- Group Value

5.2- Sharing of push buttons and switches

Select the related menu item, click on the point to be published and finally choose how that point is to be published (DI or Command); the figure below shows, for example, that the buttons PU1-1 and P3.1 are published respectively as DI1 and DI2.

Menu	System	Net sharing	Push Buttons/Switches	X	
Outputs	Node ID	DLCF	Node Number	DI 1	PO1-1
Inputs	Net sharing		Push buttons and Switches		PO1-2
Groups	Acquire inputs		Commands		PO1-3
Commands	Switch all on		Time slots		PO1-4
Rooms	Switch all off		Group Value		P2.1
Scheduler	Reset DALI field				P2.2
Localize	Check and repair addresses				P2.3
System	Reconfigure outputs and inputs			DI 2	P3.1
	Read outputs values				P3.2
					P3.3
					P3.4

As you assign a share point, it is removed from the list of available ones.

5.3- Sharing of Commands

Select the corresponding menu item, click on the point you want to publish and finally choose how to publish that point (DI or Command).

Choosing the share as DI, it can be seen that DI1 and DI2 are missing from the list of DIs as they were previously assigned.

Net sharing	Commands	X
Node Number	P1 Off.1	
Push buttons and Switches	P1 Off.2	
Commands	Twilight	As DI
Time slots	Enable AU	As Command
Group Value	P2 Off.2	
	P3 Off.2	
	P4 Off.4	

Net sharing	Condivision for Twilight	X
	Remove	
	DI 5	
	DI 6	
	DI 7	
	DI 8	
	DI 9	
	DI 10	
	DI 11	
	DI 12	
	DI 13	
	DI 14	
	DI 15	
	DI 16	

The example of the previous figure is interesting as it shows how it is possible that the "Twilight" information, which has been defined as the threshold of an external light sensor (see the descriptive section Commands and the following figure), can be used by all the DALI buses installed in the plant.

A D-SERVER controller that must use a digital point published by another D-SERVER must create a Command linked to the desired remote point. For example, if you want to bring the "Twilight" information just seen and published as DI 3 of node 1 to a second D-SERVER controller, you must create a Command (C1) called "Twilight", of the "Logic Equation" type; instead of selecting a local point (P1.1 etc. in the figure below), you will have to select "Remote point" Nx.y (point y of Node x).

Two other menu levels will be shown where it is possible to choose the node (N1..N16) and the point (DI1..DI16), see the following figure; since the Twilight information is published by node 1, point DI 3, we will choose N1.3.

Menu	Comandi		Configurazione Coma		Nodo Remoto	Punto Remoto	X
Uscite	C1	Crepuscolo	Nome	Crepuscolo	N1	DI1	
Ingressi	C2	Comando 2	Tipo	Equazione Log	N2	DI2	
Gruppi	C3	Comando 3	Equazione		N3	DI3	
Comandi	C4	Comando 4		Aggiungi Serie	N4	DI4	
Ambienti	C5	Comando 5		Aggiungi Paral	N5	DI5	
Orologio	C6	Comando 6	C1	Crepuscolo	N6	DI6	
Localizzazione	C7	Comando 7	Nx.y	Punto remoto	N7	DI7	
Sistema	C8	Comando 8			N8	DI8	
	C9	Comando 9			N9	DI9	
	C10	Comando 10			N10	DI10	
	C11	Comando 11			N11	DI11	
	C12	Comando 12			N12	DI12	
	C13	Comando 13			N13	DI13	
	C14	Comando 14			N14	DI14	
	C15	Comando 15			N15	DI15	
	C16	Comando 16			N16	DI16	

The result will be that the selected point will be inserted in the Equation row:

Menu	Comandi		Configurazione Comando 1		X
Uscite	C1	Crepuscolo	Nome	Crepuscolo	
Ingressi	C2	Comando 2	Tipo	Equazione Logica	
Gruppi	C3	Comando 3	Equazione	N1.3	
Comandi	C4	Comando 4		Aggiungi Serie (AND - '&')	
Ambienti	C5	Comando 5		Aggiungi Parallelo (OR - ' ')	
Orologio	C6	Comando 6	C1	Crepuscolo	
Localizzazione	C7	Comando 7	Nx.y	Punto remoto	
Sistema	C8	Comando 8			
	C9	Comando 9			

5.4- Sharing of Time Slots

The same approach of the previous paragraph can be applied to the time slots: instead of defining the same time slots on each installed D-SERVER controller, it is possible to define them on only one and then share them.

Net sharing	Time Slots		DI for Daytime	X
Node Number	DI 4	Daytime	Remove	
Push buttons and Switches		From Sunrise to S	DI 5	
Consents and Commands			DI 6	
Time slots			DI 7	
Group Value			DI 8	

5.5- Sharing of Group Value

The shared points just described are all digital type; the analog points that can be shared are instead the values of the light levels sent to the output groups (CG). This function is needed to “copy” the light level of a group on one bus to a group on another bus; a typical example is a situation in which the lamps in a single room are distributed on two different DALI buses (perhaps due to the number of lamps exceeding the limit of 64). In this case it will be enough that one D-SERVER publishes the value of the “master” group and for the other D-SERVER to transfer it to the “slave” group. The following figure shows that D-SERVER publishes as AI1 the value sent to the “Group Off.1”.

Net sharing	Group Value	Condivision for Group Off.1	X
Node Number	AI 1	Group Off.	Remove
Push buttons and Switches		Group Off.	AI 2
Commands		Outdoor lan	AI 3
Time slots			AI 4
Group Value			AI 5
			AI 6
			AI 7
			AI 8
			AI 9
			AI 10
			AI 11
			AI 12
			AI 13
			AI 14
			AI 15
			AI 16

The D-SERVER that receives this information will send it to its Off.1 Group by entering, in the Remote Control of the G1 Configuration menu, the node and the desired point (in the example N1 AI1, see the following figure).

Configuration G1	Remote Node for G1	Remote Value for G1	X
Name	Group Off.1	None	AI1
Switch All Off	N1		AI2
Group On	N2		AI3
Group Off	N3		AI4
Group Regulation	N4		AI5
Set Fade Time	N5		AI6
Remote Control	N6		AI7
	N7		AI8
Program Group	N8		AI9
Bus Failure	Last value	N9	AI10
Power ON	Last value	N10	AI11
Power on		N11	AI12

6- User's level APP

6.1- Description

As mentioned at the beginning of this manual, the web server integrated in the D-SERVER controller provides a simple tool that enables the user to interact with the system without being able to modify the programming; this interaction is possible through any device equipped by a browser.

For example, through this interface the user will be able to change the regulation setpoint, check the value read by the light sensors, the status of the presence sensors, view the light levels of the groups of lamps, etc.

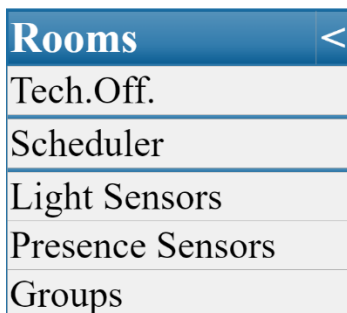
To achieve this function, no programming and/or configuration is required. Simply, the system is programmed at the installer level and automatically at the user level all the information and allowed settings will be accessible by the user.

For example, for a very simple system programmed as per the following report:

Room Report

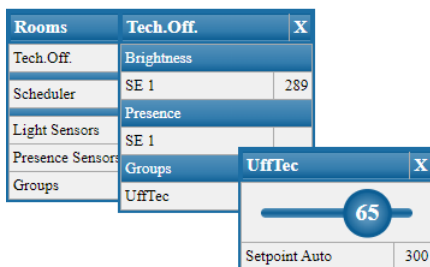
Room		Scenes	Groups	Action	
A1	Tech.Off.	Auto Regulation Setpoint: 300 Deactivation delay: 10 min with warning	UffTec	Activation / Deactivation by Presence	X / X
	Light Sensors: SE 1 (500, 5, 100)			Regulation / Offset	X / 0
	Presence Sensors: SE 1			Activation / Deactivation Values	
				Dimming by Command	
				Time slot	
				Consent by Command	
				Value for Command On / Off	

the user's APP will look like the following:



By clicking on the "<" sign you switch from the full page mode (one menu per page) to the mode with distributed menus as in the following figure:

DLCP



Remember that to switch from user to installer mode, the IP address must be in the browser address bar followed by /tools.htm. For the reverse step, replace /tools.htm with /index.htm or just leave the IP address alone.