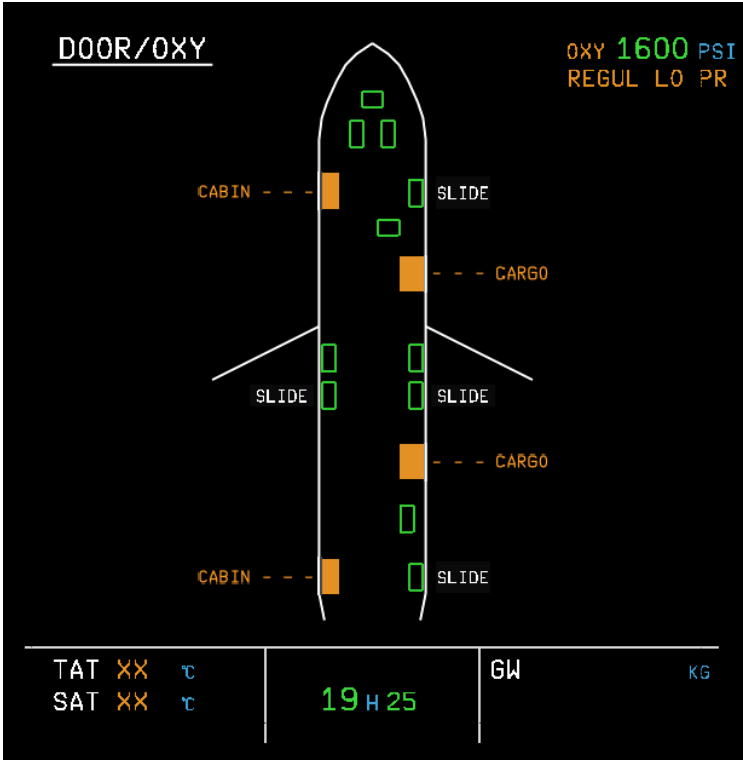


DOOR OVERLAY

for Jeehell FMGS — MSFS 2020 / 2024 MOD



Door Overlay in normal operation — open doors displayed on the ECAM SD page

Version	1.0
Compatibility	MSFS 2020 / MSFS 2024 Jeehell FMGS
Author	ZockerParadise
SimConnect	Local & Network supported

1. Introduction

The **Door Overlay** is a transparent Windows application designed to display door status indicators on top of the Jeehell FMGS ECAM System Display (SD). It connects directly to Microsoft Flight Simulator via SimConnect and reads the door states in real time. When the ECAM shows the **DOOR/OXY** page, the corresponding PNG indicators appear automatically over the open doors. On all other ECAM pages the overlay remains completely invisible.

Key features:

- Real-time door state via SimConnect (local or network)
- Automatic DOOR page detection via screenshot comparison
- Fully transparent overlay — invisible when not on DOOR page
- Position Mode for pixel-accurate placement of all indicators
- Scalable window — content scales automatically
- Supports L1/L2, R1/R2 and both Cargo doors

2. System Requirements

On the ECAM display PC (where Door Overlay runs):

Requirement	Details
.NET 6 Desktop Runtime	windowsdesktop-runtime-6.0.x — included in package
Visual C++ Redistributable	VC_redist.x64.exe — included in package
Microsoft SimConnect	SimConnect.dll included — no MSFS SDK needed
Windows 10 / 11	64-bit required

On the MSFS PC:

- Microsoft Flight Simulator 2020 or 2024
- Jeehell FMGS installed and configured
- SimConnect server enabled in SimConnect.xml (see Section 4 for network use)

3. File Structure

The following files must be present in the DoorOverlay folder:

 ONLY ON NETWORKED USE !!!	24.04.2026 21:20	Dateiordner	
 cargodoor.png	24.04.2026 13:51	PNG-Datei	2 KB
 config.json	24.04.2026 18:02	JSON File	1 KB
 debug_capture.png	24.04.2026 18:02	PNG-Datei	1 KB
 DoorOverlay.deps.json	24.04.2026 18:01	JSON File	1 KB
 DoorOverlay.dll	24.04.2026 18:01	Anwendungserwe...	32 KB
 DoorOverlay.exe	24.04.2026 18:01	Anwendung	148 KB
 DoorOverlay.pdb	24.04.2026 18:01	Program Debug D...	20 KB
 DoorOverlay.runtimeconfig.json	24.04.2026 18:01	JSON File	1 KB
 leftdoor.png	24.04.2026 13:51	PNG-Datei	2 KB
 Microsoft.FlightSimulator.SimConnect.dll	24.04.2026 13:22	Anwendungserwe...	157 KB
 reference.png	24.04.2026 18:02	PNG-Datei	1 KB
 rightdoor.png	24.04.2026 13:51	PNG-Datei	2 KB
 SimConnect.dll	24.04.2026 13:22	Anwendungserwe...	77 KB
 windowsdesktop-runtime-6.0.36-win-x6...	24.04.2026 18:48	Anwendung	56.036 KB
 VC_redist.x64.exe	24.04.2026 19:00	Anwendung	25.035 KB

Complete file structure of the DoorOverlay installation folder

File	Description
DoorOverlay.exe	Main application
DoorOverlay.dll	Application library (required)
SimConnect.dll	Native SimConnect library
Microsoft.FlightSimulator.SimConnect.dll	Managed SimConnect wrapper
leftdoor.png / rightdoor.png / cargodoor.png	Door indicator images
config.json	Settings file (auto-created on first save)
reference.png	DOOR page reference image (created via Capture Screen)
windowsdesktop-runtime-6.0.x.exe	.NET 6 Runtime installer
VC_redist.x64.exe	Visual C++ Redistributable installer
ONLY ON NETWORKED USE !!! (folder)	Contains SimConnect.cfg for network setup

4. Installation

Step 1 — Install Prerequisites (first time only)

Run both installers from the DoorOverlay folder if not already installed:

- Double-click **windowsdesktop-runtime-6.0.x.exe** and follow the wizard
- Double-click **VC_redist.x64.exe** and follow the wizard

Step 2 — Local Use (ECAM PC = MSFS PC)

No additional configuration needed. Simply run **DoorOverlay.exe**.

Step 3 — Network Use (ECAM PC and MSFS PC are different computers)

■ **For network use, SimConnect must be configured on BOTH computers!**

On the MSFS PC — Enable SimConnect server:

Open the SimConnect.xml file. The path depends on your MSFS version:

MSFS Version	SimConnect.xml Path
MSFS 2024 / 2020 (Microsoft Store / Game Pass)	C:\Users\USERNAME\AppData\Local\Packages\ Microsoft.Limitless_8wekyb3d8bbwe\LocalCache\SimConnect.xml
MSFS 2024 (Steam)	C:\Users\USERNAME\AppData\Roaming\ Microsoft Flight Simulator 2024\SimConnect.xml
MSFS 2020 (Steam)	C:\Users\USERNAME\AppData\Roaming\ Microsoft Flight Simulator\SimConnect.xml

Replace (or add) the **first** <SimConnect.Comm> entry in SimConnect.xml with:

```
<SimConnect.Comm>
  <Descr>Static IP4 port</Descr>
  <Protocol>IPv4</Protocol>
  <Scope>global</Scope>
  <Address>0.0.0.0</Address>
  <Port>500</Port>
  <MaxClients>64</MaxClients>
  <MaxRecvSize>41088</MaxRecvSize>
</SimConnect.Comm>
```

On the ECAM PC — Configure SimConnect.cfg:

Copy **SimConnect.cfg** from the *ONLY ON NETWORKED USE !!!* folder into the main DoorOverlay folder. Then open it and enter the IP address of your MSFS PC:

```
[SimConnect]
Protocol=IPv4
Address=192.168.1.XXX ; <-- enter MSFS PC IP here
Port=500
MaxReceiveSize=4096
DisableNagle=0
```

5. First Start & Setup

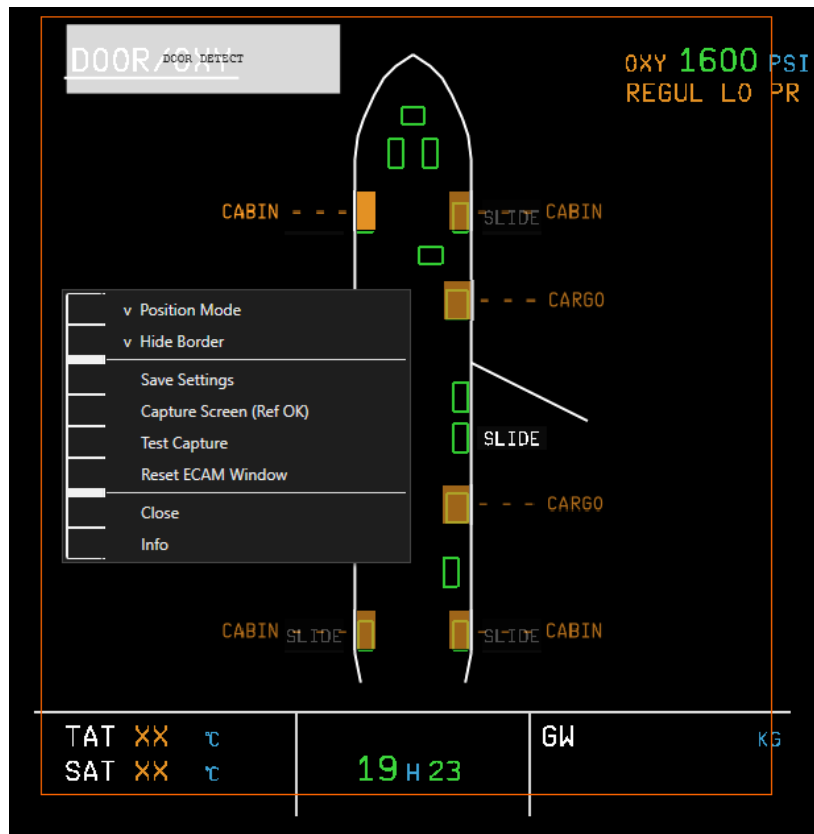
■ **IMPORTANT:** On first start, the window cannot be moved until Position Mode is activated!
Right-click the overlay and select Position Mode first.

Step 1 — Start the Application

- Run **DoorOverlay.exe**
- A transparent window with an orange border appears
- The overlay is now active but invisible (no doors open yet)

Step 2 — Enter Position Mode

- **Right-click** anywhere on the overlay
- Select **Position Mode** — a checkmark appears next to it
- The orange border becomes visible and all door PNGs appear (semi-transparent)
- The white **DOOR DETECT** rectangle becomes visible



Position Mode active — orange border visible, all door PNGs and DOOR DETECT rectangle shown. Context menu open via right-click.

Step 3 — Position the Overlay Window

- In Position Mode: **left-click on an empty area** and drag to move the window
- Position the overlay exactly over your SD (System Display) window
- Drag the **window edges or corners** to resize — content scales automatically

Step 4 — Position the Door PNGs

- **Click on a door PNG** to select it (it becomes fully bright)
- Use **arrow keys** to move it 1 pixel at a time
- Use **Shift + arrow keys** to move it 5 pixels at a time
- Position each PNG exactly over the corresponding door on the ECAM

Key	Action
Arrow keys (←↑→↓)	Move selected PNG by 1 pixel
Shift + Arrow keys	Move selected PNG by 5 pixels
Left-click on PNG	Select that PNG for keyboard movement
Left-click + drag (empty area)	Move the entire overlay window
Drag window edge/corner	Resize the window (content scales)

Step 5 — Position the DOOR DETECT Rectangle

- Drag the white **DOOR DETECT** rectangle to the top-left area of the SD window
- Place it exactly over the **DOOR/OXY** title text of the Jeehell ECAM door page
- This rectangle defines the area used to detect if the DOOR page is active

Step 6 — Save Settings

■ **Do not forget to save! All positions will be lost if you close without saving.**

- Right-click the overlay
- Select **Save Settings**
- Settings are stored in **config.json** in the application folder

6. Capture Screen — DOOR Page Detection Setup

The overlay uses pixel comparison to detect when the ECAM is showing the DOOR/OXY page. A reference image must be captured once to enable this feature.

How to capture the reference image:

- Make sure Position Mode is **OFF**
- Switch your Jeehell ECAM SD to the **DOOR/OXY** page
- Right-click the overlay and select **Capture Screen**
- A confirmation dialog appears — the file **reference.png** is saved

How to verify the detection works correctly:

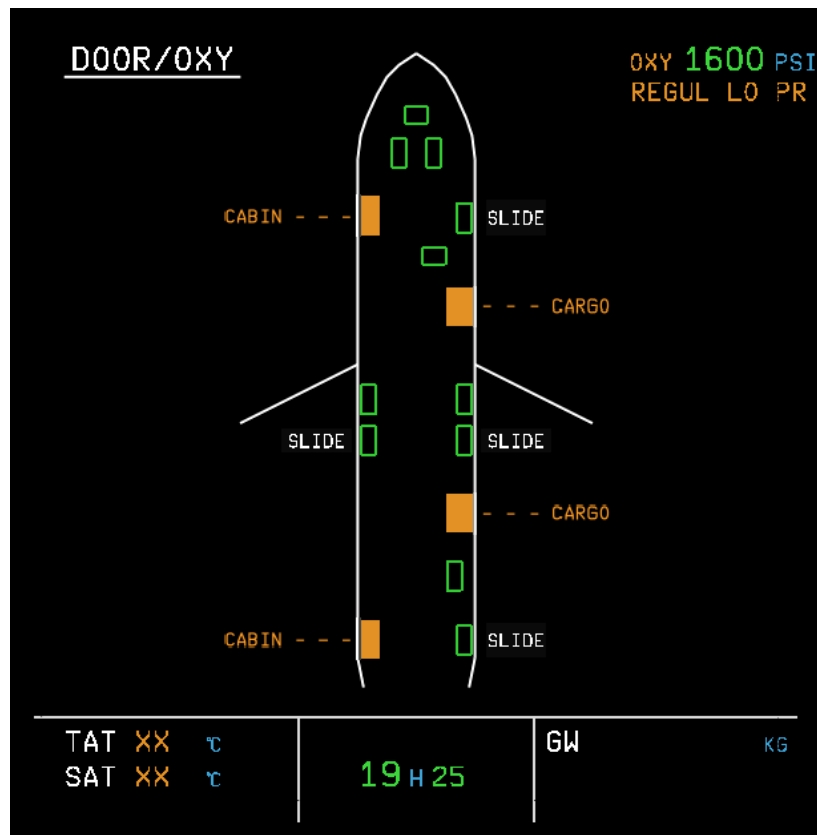
- Switch to a **different ECAM page** (e.g. APU, BLEED, ENG)
- Right-click and select **Test Capture**
- The similarity percentage should be **clearly below 75%**
- If it is above 75%, reposition the DOOR DETECT rectangle to a more unique area and recapture

How detection works:

The tool captures a screenshot of the area covered by the DOOR DETECT rectangle directly from the SD window using the Windows PrintWindow API — this works even if other windows are placed on top of the SD display. The captured image is compared against the saved reference image. Only bright (non-black) pixels are compared, so the black ECAM background does not affect the result. If the similarity reaches 75% or above, the DOOR page is considered active and door indicators are shown.

7. Daily Use

Once configured, the Door Overlay requires no interaction during normal operation.



Normal operation — L1, both Cargo doors open. DOOR/OXY page active on ECAM.

Normal operation:

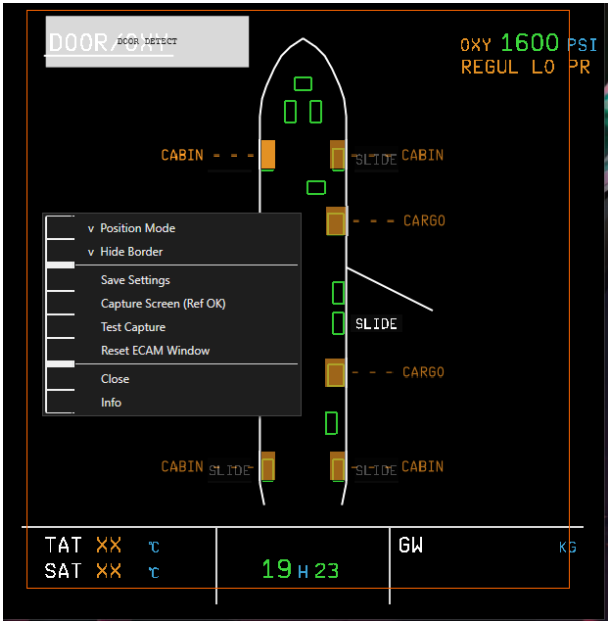
- Start **MSFS** and load your aircraft
- Start **Jeehell FMGS**
- Start **DoorOverlay.exe**
- When the ECAM SD shows the **DOOR/OXY page**, open door indicators appear automatically
- When you switch to any other ECAM page, all indicators disappear
- When a door is closed, its indicator disappears

Door mapping:

Indicator	SimConnect Variable	Trigger
L1 (Front Left)	EXIT OPEN:0	L1 door open
L2 (Rear Left)	EXIT OPEN:0	L1 door open (shared)
R1 (Front Right)	EXIT OPEN:3	R1 door open
R2 (Rear Right)	EXIT OPEN:3	R1 door open (shared)
Cargo 1 (FWD)	EXIT OPEN:5	Cargo door open
Cargo 2 (AFT)	EXIT OPEN:5	Cargo door open (shared)

8. Context Menu Reference

Right-click anywhere on the overlay to open the context menu.

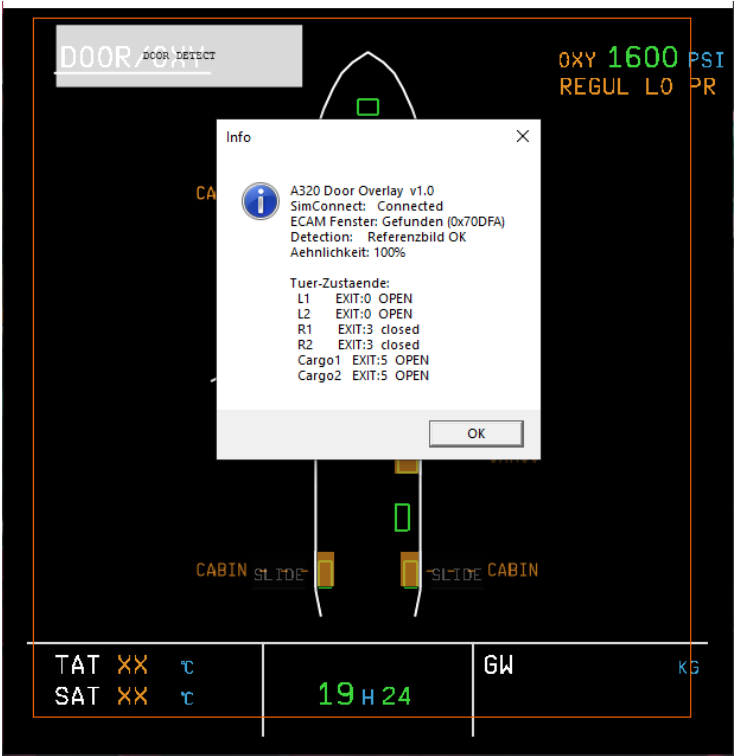


Context menu opened via right-click on the overlay

Menu Item	Description
Position Mode	Toggles position mode on/off. When active (checkmark shown), the overlay border is visible and all door PN
Hide Border	Hides the orange 1px border of the overlay window. Can be toggled independently from Position Mode.
Save Settings	Saves all current positions, window size and settings to config.json. Always save after making changes!
Capture Screen	Captures a reference screenshot of the DOOR DETECT area. Must be done with the ECAM on the DOOR/C
Test Capture	Captures the current state and shows the similarity percentage vs. the reference image. Use this to verify th
Reset ECAM Window	Forces the application to search for the SD window again. Use if the ECAM window was restarted or the har
Close	Closes the Door Overlay application.
Info	Shows current status: SimConnect connection, ECAM window handle, detection similarity and all door states

9. Info Dialog

The Info dialog (right-click → Info) provides a real-time status overview:



Info dialog — SimConnect connected, ECAM window found, 100% similarity, door states shown

Field	Description
SimConnect	Shows 'Connected' when successfully linked to MSFS via SimConnect.
ECAM Fenster	Shows the Windows handle of the SD window. 'Nicht gefunden' means the window title in config.json does not match.
Detection	Shows 'Referenzbild OK' when a reference.png exists, otherwise prompts to run Capture Screen.
Aehnlichkeit	Last measured similarity percentage between the current capture and the reference image.
Tuer-Zustaende	Shows each door name, its EXIT OPEN index and current state (OPEN / closed).

10. Autostart with Jeehell FMGS

The Door Overlay can be launched automatically together with Jeehell FMGS using a simple batch file. This is the recommended workflow for regular use.

Create a startup batch file:

Create a new text file, rename it to **start_jeehell.bat** and paste the following:

```
@echo off
echo Starting Jeehell FMGS + Door Overlay...

rem Start Jeehell
start "" "C:\A320FMGS\Starter.exe"

rem Wait 5 seconds for Jeehell to initialize
timeout /t 5 /nobreak >nul

rem Start Door Overlay
start "" "C:\DoorOverlay\DoorOverlay.exe"

echo Done.
```

■ **Adjust the paths to match your actual installation directories!**

You can also add this batch file to the Windows Startup folder (**shell:startup**) to launch everything automatically when Windows starts.

11. Troubleshooting

Application does not start (no window, no error)

- Install **windowsdesktop-runtime-6.0.x.exe** from the DoorOverlay folder
- Install **VC_redist.x64.exe** from the DoorOverlay folder
- Run DoorOverlay.exe from PowerShell to see error output
- Check that error.log was created in the folder — it contains the exact error

Window appears but cannot be moved

- Right-click the overlay and activate **Position Mode** first
- Only in Position Mode can the window be moved by left-clicking and dragging

SimConnect: NOT connected

- Make sure MSFS is running before starting DoorOverlay
- For network use: verify SimConnect.cfg IP address is correct
- For network use: verify SimConnect.xml on the MSFS PC has the global entry
- Check Windows Firewall — port 500 must be open on the MSFS PC
- Try right-click → **Reset ECAM Window** to reconnect

ECAM window not found

- The SD window title must match **EcamWindowTitle** in config.json (default: 'SD')
- Open config.json and verify the EcamWindowTitle value matches your SD window title exactly
- Right-click → **Reset ECAM Window** to force a new search

Doors shown on wrong ECAM pages (Detection not working)

- Delete **reference.png** from the folder
- Switch ECAM to the DOOR/OXY page
- Right-click → **Capture Screen** to create a new reference image
- Switch to another ECAM page and run **Test Capture** — similarity must be below 75%
- If similarity is still high, reposition the DOOR DETECT rectangle over a more unique area (the DOOR/OXY title text)

Door indicators do not appear when doors are open

- Check the Info dialog — verify SimConnect is Connected
- Verify ECAM is on the DOOR/OXY page
- Check that Capture Screen has been performed
- Run Test Capture on the DOOR/OXY page — similarity must be above 75%
- Verify door EXIT indices in config.json match your aircraft configuration

Indicators disappear while doors remain open

- This was a known issue in earlier versions — ensure you are using the latest build
- The door state uses latch logic: once open (value ≥ 0.5) it stays shown until fully closed (value ≤ 0.05)

12. Quick Setup Checklist

Use this checklist for first-time setup:

1.		Install .NET 6 Desktop Runtime (windowsdesktop-runtime-6.0.x.exe)
2.		Install Visual C++ Redistributable (VC_redist.x64.exe)
3.		For NETWORK use: copy SimConnect.cfg from the network folder and set the MSFS PC IP
4.		For NETWORK use: edit SimConnect.xml on the MSFS PC with the global server entry
5.		Start MSFS and load the aircraft
6.		Start Jeehell FMGS
7.		Start DoorOverlay.exe
8.		Right-click → Position Mode
9.		Move the overlay window over the SD display
10.		Resize the window to fit the SD display
11.		Click each door PNG and use arrow keys to position it precisely
12.		Drag the DOOR DETECT rectangle over the DOOR/OXY title
13.		Right-click → Save Settings
14.		Switch ECAM to DOOR/OXY page
15.		Right-click → Capture Screen
16.		Switch to another ECAM page → right-click → Test Capture → verify similarity is below 75%
17.		Right-click → Position Mode (deactivate)
18.		Open a door in the sim and verify the indicator appears

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Designed by ZockerParadise

User Manual v1.0