Words from the developer

Thank you for having purchased the add-on „S41X Low Entry Business“.

Inspired by the idea of bringing home-grown coaches to the screen, I created a collection of vehicles with a lovingly attention to detail. I tried to realize a high level of accuracy in the eight months of development. This project has cost me and my team a lot of work and time investment, and I am happy to present you the product now.

I would like to thank all the people that helped me out with materials, personal support and their competent opinion.

I also want to give special praise to the following people. Without them, this project wouldn’t have been possible in this way:

- Lazarus, who provided objective criticism and feedback, pictures research, translations
- Perotinus, who made the engine sounds, texture working advice and provided the “premium” mirrors mesh
- KleinIV, who provided OM936 engine recordings, and fonts
- R5, who provided some sounds too
- Yani, who provided doors sounds
- Chrizzly92, who provided his Cashdesk, Printer, VOITH retarder sounds and his ZF 6 speed automatic gearbox
- BM30, who provided scripting and physics help
- The testers, who reported every single bug
- The art workers, who provided liveries, Alka, Perotinus, and notio.
- All the companies that helped us in having stuff on this project

Introduction

In this add-on we recreated a series of Intercity buses called „S41X Low Entry Business“. These include facelifted versions, from 12.33m to 14.64m.

The 400 Series was introduced in 2006 for the first time, with intercity buses high floor. In 2014, the 400 Series introduced “Low Entry” buses, with low floor on the front and high floor at the rear. They take the same base as the classic intercity version, with multiple doors and floor layout, with a lot of options. This series lasted until 2023, replaced by the 500 Series. The „S41X Low Entry Business“ series is quite common all over the world by his versatility and reliability.

The S41X Low Entry Business

S415 LE Business

Length:	12,330 mm
Width:	2,550 mm
Height:	3,355 mm (incl. air conditioning)
Engine:	OM936 6 in-line 295 HP max. torque 1200Nm OM936 6 in-line 348 HP max. torque 1400Nm
Gearbox:	- Manual 6 speed - Voith DIWA 4 speed automatic - ZF Ecolife 6 speed automatic
Top speed:	100 km/h
Seats:	**46** + 15 + 1
Doors layout:	- 800mm | 1200mm (1-2-0) - 1000mm | 1200mm (1-2-0) - 1000mm | 1000mm (1-1-0)

S415 LE Business - Facelift

Length:	12,330 mm
Width:	2,550 mm
Height:	3,355 mm (incl. air conditioning)
Engine:	OM936 6 in-line 295 HP max. torque 1200Nm OM936 6 in-line 348 HP max. torque 1400Nm
Gearbox:	- Manual 6 speed - Voith DIWA 4 speed automatic - ZF Ecolife 6 speed automatic
Top speed:	100 km/h
Seats:	**42** + 25 + 1
Doors layout:	- 800mm | 1200mm (1-2-0) - 1000mm | 1200mm (1-2-0) - 1000mm | 1000mm (1-1-0)

S416 LE Business - Facelift

Length:	13,040 mm
Width:	2,550 mm
Height:	3,355 mm (incl. air conditioning)
Engine:	OM936 6 in-line 295 HP max. torque 1200Nm OM936 6 in-line 348 HP max. torque 1400Nm
Gearbox:	- Manual 6 speed - Voith DIWA 4 speed automatic - ZF Ecolife 6 speed automatic
Top speed:	100 km/h
Seats:	**49** + 18 + 1
Doors layout:	- 800mm | 1200mm (1-2-0) - 1000mm | 1200mm (1-2-0) - 1000mm | 1000mm (1-1-0)

S418 LE Business - Facelift

Length:	14,640 mm
Width:	2,550 mm
Height:	3,355 mm (incl. air conditioning)
Engine:	OM470 6 in-line 355 HP max. torque 1700Nm OM470 6 in-line 388 HP max. torque 1900Nm
Gearbox:	- Manual 6 speed - Voith DIWA 4 speed automatic - ZF Ecolife 6 speed automatic
Top speed:	100 km/h
Seats:	**58** + 18 + 1
Doors layout:	- 800mm | 1200mm (1-2-0) - 1000mm | 1200mm (1-2-0)

Dashboard

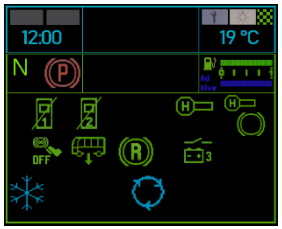
1. DPF regeneration
2. ASR (Anti Slip Regulation)
3. Driver electrical sunblind
4. Switch Retarder with Brakes
5. Driver space lightning
6. Freeze the Info display; change the displayed data
7. Warn blinkers school Switch
8. Full passenger space lightning
9. Front of the coach interior lightning
10. Open and close the driver window
11. Ambient passenger space lightning
12. Horn type switch
13. Open and close electrical roof hatches (front and rear)
14. Automatic kneeling with doors
15. Switch Door Brake
16. Electrical mirrors adjustment
17. Lights switch
18. Parking Brake
19. Left to right: Horn, Wiper Speed and Wash (pull to the right), blinkers and beam lights
20. Speedometer incl. odometer
21. RPM Meter
22. Cluster lights

Euro VI cluster lights from left to right first and second row

1. Left direction indicator
2. Low beam
3. High beam
4. Fog lights
5. STOP | Vehicle not operational
6. Attention | Stop requested (…)
7. Slip control
8. Parking brake
9. Right direction indicator
10. ASR status
11. Particle filter

23. Info display (doors, brake pressure, temperatures, etc.)
24. Steering column (click to hide steering wheel)
25. Steering wheel adjust Switch
26. Stop brake Switch
27. Trip recorder
28. Ticket Printer and IBIS
29. Heating controls
30. Door 1 Switch
31. Door 2 Switch
32. Warn blinkers Switch
33. Manual stick (or automatic selector)
34. Retarder: drag towards and forward to use
35. Radio
36. Cash desk

Info display



Main mode
This mode shows current information and state of the functions of the vehicle. For example: doors, ASR, Parking Brake, Suspensions, Air conditioning, Stop Brake, Retarder, etc. This mode comes at the start of the ignition.

Brake pressure mode
Here is the current brake pressure. To start driving with the vehicle, the brake pressure must reach at least 6.5 bar. In case the brake pressure is not enough, the cluster will indicate a “STOP” error and the Info display will be in error status.

Diesel, AdBlue and Battery mode

Here is the current level of Diesel and AdBlue (as it is on every mode too).

Engine oil mode

Here is the current engine oil temperature.

Settings mode
Here is the brightness of the LCD screen and the blinker volume percentage. Press the “INFO” key to access this mode. Press it back to switch between brightness and blinker volume setting. Hold “SYSTEM” and “RESET” for “+/-“. Press “QUIT” to quit the mode.

Ticket printer and IBIS

This device takes over the traditional IBIS functions and combines them with ticket sales. The device is ready when the home screen asks for touch input.

After touching the screen, it asks for the company number. In reality this allows to distinguish between transport companies or subcontractors, but OMSI does not have this functionality. Therefore, every two-digit number larger than 10 can be entered. The input has to be confirmed with “OK”

After entering the company number, the device shows the timetable menu. As with the traditional IBIS, you can define a driving mode here by clicking on the selection list. Options are driving as per the timetable, but also entering a destination or special line character manually

using the familiar formatting. IMPORTANT: For the upper 3 choices he printer always expects a 5-digit input (line + route), and for the lower 3 choices a 3-digit input. If a term code has for example “001” as index, the prepended zeros have to be entered!

After entering line + route, the input has to be confirmed with “OK”.

If the input is correct, the printer changes into driving mode. This shows the current (line 1) bus stop and the 2 following stops (lines 2 and 3). Line 4 shows the current final stop of the route. Die up and down buttons to the left of the screen switch to the next and previous bus stops. IMPORTANT: departure times and the current timetable (upper right) will only be shown when a timetable is active! Also, if a line and route is active, the destination will be shown in the header.

The device shows tabs in the footer that switch between the different functions. There are, from left to right:

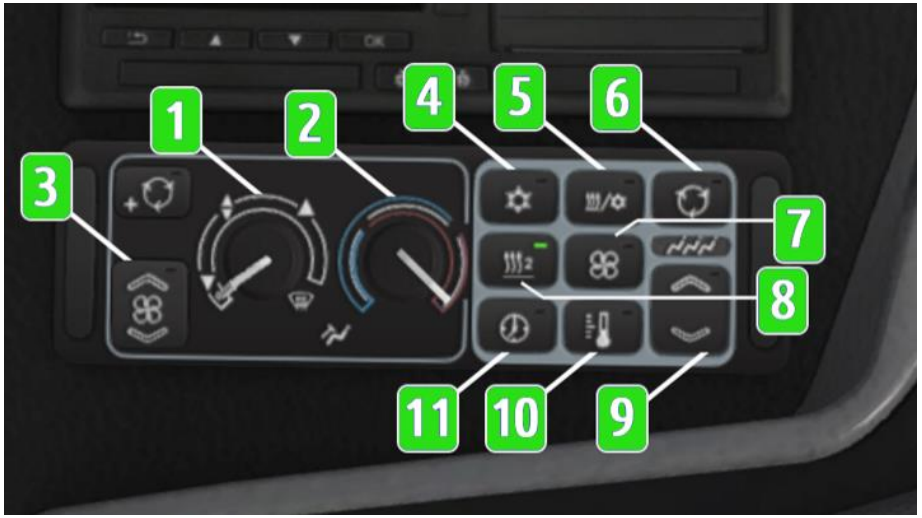
1. Drive selection
2. Settings
3. No function
4. Messages
5. Visual controls
6. Driving mode

The settings mode allows for the shift to be paused or terminated. The screen brightness can also be changed here. The device has a selection menu to the right. Clicking on the yellow icon on the upper right-hand corner switches the device from “IBIS mode” to “selling mode”. In the center of the screen the type of ticket can be changed.

After choosing a type of ticket, the price will be shown in the left column. Clicking on the printer in the lower right-hand corner will print the ticket. There are also buttons to cancel the process (“Abbruch”) and go back to (“Zurück”)

The Matrix Display uses strings 11 and 12 of the "Universal Hof file" (https://reboot.omsi-webdisk.de/wiki/entry/45-hof-file/) for writing in first and second row. If these two strings are empty, it uses strings 1 and 2 (for standard Krueger).

Heizung



1. Air distribution driver’s aera
2. Temperature driver’s aera
3. Fans speed driver’s aera
4. Air conditioning
5. Switch air conditioning/heating passenger cabin
6. Fresh air/recirculating air
7. Heating passenger cabin. Press once to turn on/set fans speed; long press to turn off
8. Auxiliary heater
9. Increase/decrease temperature or fans speed
10. Set the passenger cabin temperature
11. Auxiliary heater schedule

Repaints

Find in the folder “Addons\S41X LE Business\Templates” the templates .psd files for all the versions.

Find the according templates to use in this table:

S415 LE 1-2-0 800mm – 1200m	Main texture: S415LE_old_1-2-0_Main
	Glass texture: S415LE_old_1-2-0_Glass
S415 LE Facelift 1-1-0 1000mm – 1000m	Main texture: S415LE_1-1-0_Main
	Glass texture: S415LE_1-1-0_Glass
S415 LE Facelift 1W-2-0 1000mm – 1200m	Main texture: S415LE_1W-2-0_Main
	Glass texture: S415LE_1W-2-0_Glass
S415 LE Facelift 1-2-0 800mm – 1200m	Main texture: S415LE_1-2-0_Main
	Glass texture: S415LE_1-2-0_Glass
S416 LE Facelift 1-1-0 1000mm – 1000m	Main texture: S416LE_1-1-0_Main
	Glass texture: S416LE_1-1-0_Glass
S416 LE Facelift 1W-2-0 1000mm – 1200m	Main texture: S416LE_1W-2-0_Main
	Glass texture: S416LE_1W-2-0_Glass
S416 LE Facelift 1-2-0 800mm – 1200m	Main texture: S416LE_1-2-0_Main
	Glass texture: S416LE_1-2-0_Glass
S418 LE Facelift 1W-2-0 1000mm – 1200m	Main texture: S418LE_1W-2-0_Main
	Glass texture: S418LE_1W-2-0_Glass
S418 LE Facelift 1-2-0 800mm – 1200m	Main texture: S418LE_1-2-0_Main
	Glass texture: S418LE_1-2-0_Glass

Painting

Use the **Glass** texture to paint the windows, doors windows and windshield. Paint on the “Draw here” layer. You can add more layers if needed.
When you are ready to save the **Glass** file:

1. Merge down the layer “Windows opacity” with the “Background” layer
2. Merge down the layer “Draw here” with the “Background” layer
3. Save it as .DDS texture BC3 DXT5

Use the **Main** texture to paint the body. Paint on the “Draw here” layer. You can add more layers if needed.
When you are ready to save the **Main** file:

1. Set all the layers at the right opacity (excluding the body layer); (refers to the file “opacity_exterior_parts.png” or layers name)
2. Merge all the layers (excluding the body layer)
3. Merge down the “Draw here” layer to the “Body” layer
4. Set the opacity of the “Body” layer to 6%
5. Save it as .DDS texture BC3 DXT5

Customizable parts

If you need to add more entries in your .cti file to customize mort parts on your coach : see all the customizable textures in this table. Please use the “template.cti” in the “Addon” folder and change it as you need.

.CTI texture name	File texture name
farbschema_tex1 (necessary)	S4xxLE_yy_Main.dds – Body paint
farbschema_tex2	S4xxLE_yy_Int.dds – Floor paint
farbschema_tex3	S4xxLE_yy_Int2.dds – Poles roof interior: roof, poles and curtains paint
farbschema_tex4 (necessary)	S4xxLE_yy_Glass.dds – Windows paint
ctc_front_logo	e-logo.dds – Front logo paint
farbschema_tex5	S4xxLE_yy_Int3.dds – Racks roof interior: roof paint
int_eco_1	S4xxLE_yy_Int-Eco.dds (Eco seats) – Panels color
int_eco_2	S4xxLE_yy_Int-Eco.dds (Eco seats) – Walls textures
int_tre_1	S4xxLE_yy_Int-Eco.dds (Travel seats) – Panels color
int_tre_2	S4xxLE_yy_Int-Eco.dds (Travel seats) – Walls textures
ctc_seats_passenger1	S400LE_Seats_Eco.dds – Passengers seats (Eco model)
ctc_seats_passenger2	S400LE_Seats_Fold.dds – Wheelchair aera seats
ctc_seats_passenger3	S400LE_Seats_Travel.dds – Passengers seats (Travel model)
ctc_seats_driver	S400LE_Seats_Driver.dds – Driver seat
ctc_wheels	e-wheels.dds – Wheels
ctc_mirrors	e-mirrors.dds – Mirrors option 1 “Premium”
ctc_plate	S400LE_Kennzeichen.dds – Ident. Plate
ctc_black_tint_windows_ext	black_tint.tga – Exterior additional black tint windows
ctc_black_tint_windows_int	black_tint_int.tga – Interior additional black tint windows
ctc_clima	S400LE_clima.dds – Exterior air conditioner
ctc_seats_passenger4	S400LE_Seats_Racks.dds – Carpet on the racks
ctc_roof_vent	roof_vent.dds – Extractor on the exterior body roof

CTI variables

To customize your coach you can also assign variables in the .cti file of your repaint. Set the desired value to define the option. Find in the following table the according option for every CTI variable. Please use the "template.cti" in the "Addons" folder and change it as you need.

[setvar]	Values	Description	Versions
vis_display_side	0/1	0 – no side matrix destination display 1 – side matrix destination display	all
vis_display_rear	0/1	0 – no rear matrix destination display 1 – rear matrix destination display	all
vis_inner_mirror	0/1	0 – additional interior mirror 1 – no additional interior mirror	all
vis_wheels	0/1	0 – wheel nuts 1 – wheel hubcap	all
vis_interior_roof_type	0/1	0 – interior with poles on the roof 1 – interior with racks on the roof	all
vis_interior_type	0/1	0 – Eco seats 1 – Travel seats	all
vis_floor_antislip	0/1	0 – no anti slip rails on the stairs 1 – anti slip rails on the stairs	all
vis_pattern_panel	0/1	0 – pattern on the panels 1 – no pattern on the panels	all
vis_curtains	0/1	0 – curtains 1 – no curtains	all
vis_individual_pack	0/1	0 – no additional racks options 1 - individual passengers vents and lightning, lather on the racks	all
vis_mirrors	0/1	0 – classic mirrors 1 – premium mirrors	all
vis_number	0/1	0 – classic registration plate format 1 – customized registration plate format	all