

TELECOM
ParisTech



Une école de l'IMT

SpiROSE snapshot

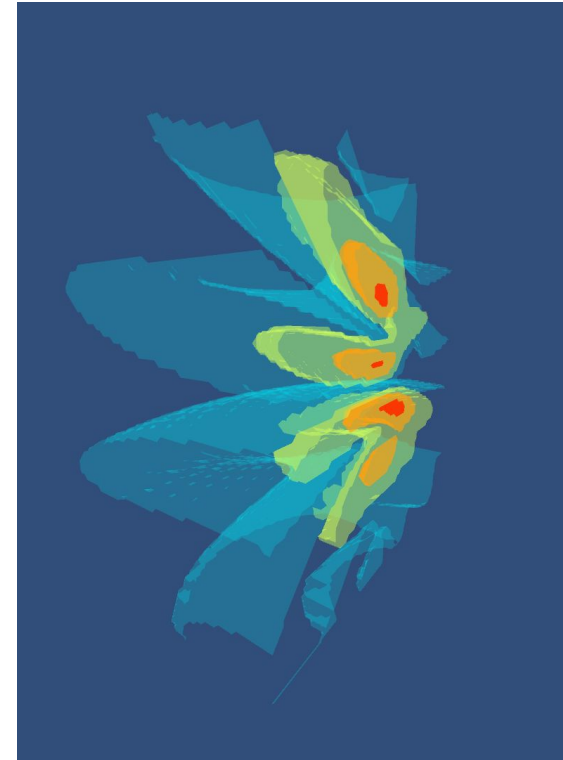
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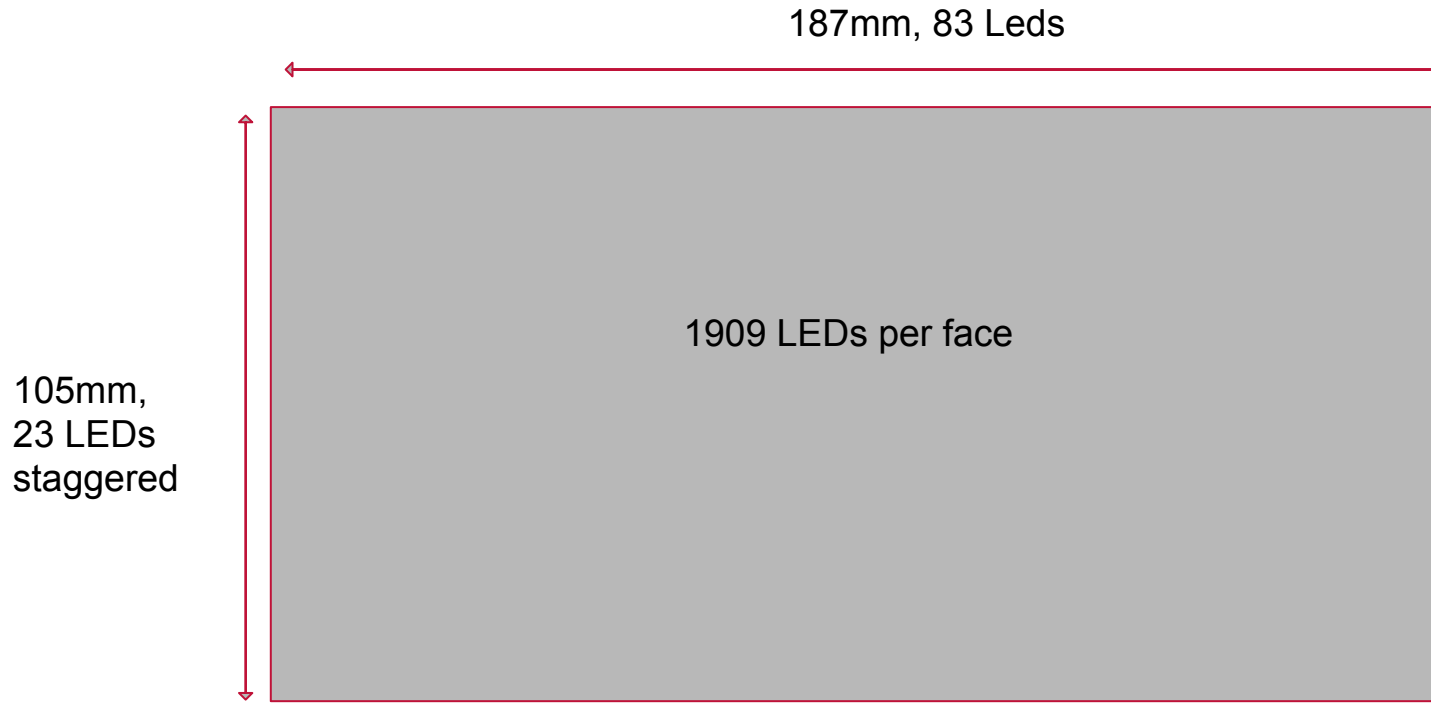
What is SpiROSE for?

- 3D video
- Games
- Data visualization



Iso-surfaces d'un champ
génééré par une box-wi-fi

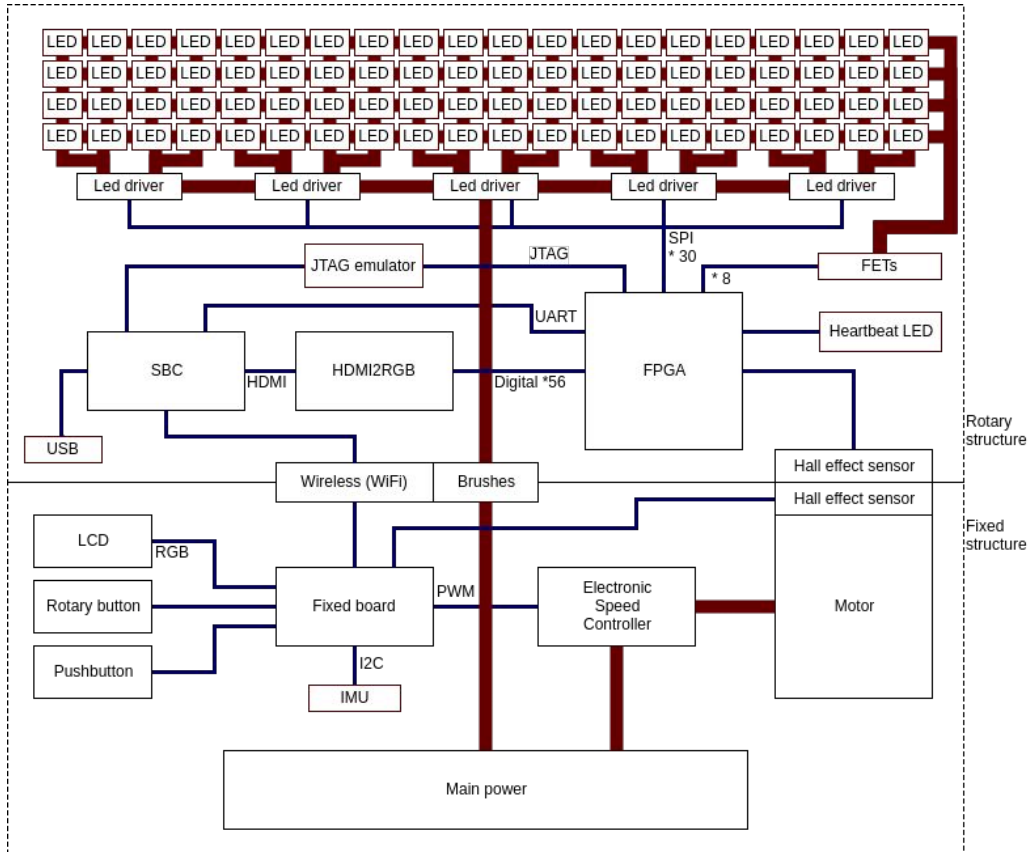
Current design: rotating panel



Specs

- LED spacing: 2.25 mm
- framerate: 30 fps
- LED per face: 1909
- LED per column: 23
- LED per row: 83
- width: 0.187 m
- height: 0.105 m
- bandwidth: 22 Mo/s
- nominal power: 177W
- LED power: 46,5 mW
- number of voxels: 250 000
- number of driver: 30
- outermost driver bandwidth: 25 MHz
- fixed structure dimensions: $0.3 \times 0.3 \times 0.1 \text{ m}^3$

Architecture



Components and roles

Name	Role	Price (€) * number
SBC	Uncompress a video stream and send it to the FPGA	81.79 * 1
HDMI2RGB	Converts HDMI to digital RGB	4.2 * 1
FPGA	Drives the LED drivers	30 * 1
LED driver	8 multiplexing, 48 channels -> drive $8*48/3 = 128$ LEDs	2.52 * 30
LEDs	Make light	0.094 * 3818
LCD screen	Displays the user interface	Owned
Potentiometer	Allows to navigate in the LCD screen	1
Motor	Rotate the panel at 20-30 fps	83.3 * 1
ESC	Controls motor speed	39.9 * 1
IMU	Allows to stop/not start the system if it is not idle	Owned

Components and roles

Name	Role	Price (€) * number
Reductor	Decrease speed and increase torque	102 * 1
Plexiglas cube	Protect the users from potential projectiles	30-100 * 1
Diffuser	Increase the LEDs' emission cone	Owned
Hall Effect sensor	Track the rotation to synchronize the display	1 * 2

83*46 picture

