

An aerial photograph of a white boat on a body of blue water, viewed from above. The boat is positioned in the center-left of the frame. The water's surface is textured with small waves and reflections. A white rectangular frame is superimposed over the image, containing the text and logo.

# Avikus

MARITIME AUTONOMOUS PIONEER

Avikus specializes in developing maritime autonomous solutions and was founded in 2021 by Hyundai Heavy Industries Group, the No.1 shipbuilder.



# Contents

- Product line-up
- Auto Route Planning
- Navigation Assistant
- Docking Assistant
- Examples



# Product line-up

## Solutions

### NeuBoat

navigation

### NeuBoat

navigation & docking

### NeuBoat

control



Detection



Recognition



Decision



Control

Level.1

Level.2

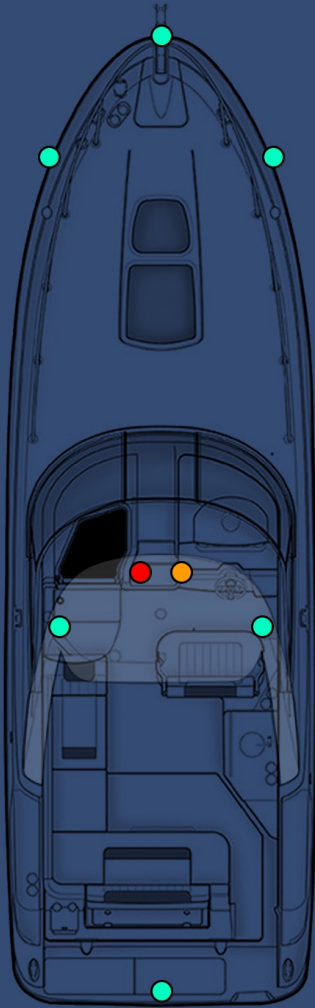
- Smart Object Detection and Classification based on Sensor Fusion (Camera, LiDAR, Radar)
- AR Visualization
- Route Planning based on electronic chart
- Path Recommendation for Avoiding Collisions

- AI navigation function
- 3D Surround View
- Collision Alarm (dock, slip or other objects)

- AI Navigation and Docking functions
- Path Following Control (Throttle / Steering)
- Collision Avoidance Maneuvering
- Auto Docking Control
- Docking area Recognition

# Product line-up

## Hardware Products



● Navigation Assistant Camera



● Docking Assistant Camera



● Lidar \*Optional



Object Recognition Unit



Auto Pilot Unit



Engine Interface Unit



Control

# Product line-up

## System Configuration



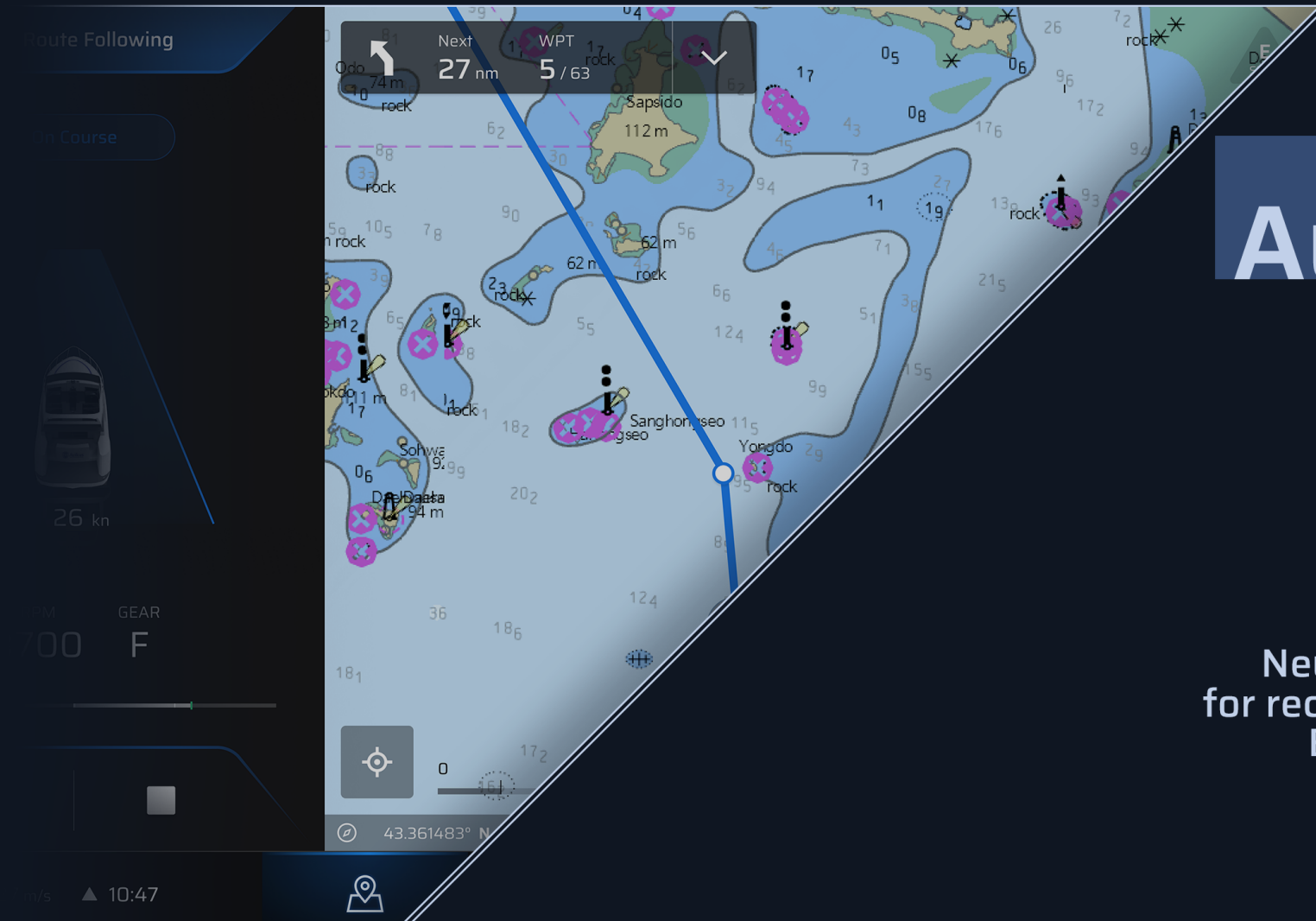
Route Planning

Navigation Assistant

Docking Assistant

# Auto Route Planning

## NeuBoat



# Automatically Plan Your Journey

NeuBoat is the world's first autonomous solution for recreational boats that supports safe navigation. By using our NeuBoat Solution, you can enjoy more enjoyable leisure activities on the water.

# Auto Route Planning

NeuBoat



# Navigation Assistant

NeuBoat



## AI Guidance for Your Journey

NeuBoat assists navigation by displaying detected obstacles to avoid and the optimal routes. It also has the ability to autonomously navigate until your destination safely.

- AI-based Object Recognition
- Path Recommendation for Avoiding Collisions and AI Control
- Route Guidance and Autopilot



# Navigation Assistant

## NeuBoat

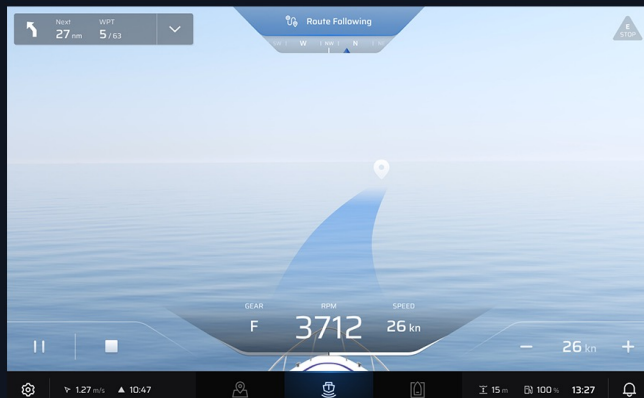
### Screen Design



Detecting Obstacles



Following Planned Route



Path Guidance



Collision Avoidance

### Detect and Define Obstacles



Motor Boat



Vessel



Sailing Yacht



Rowing Boat



Channel Marker



Buoy



Structure



Others

# Navigation Assistant

NeuBoat

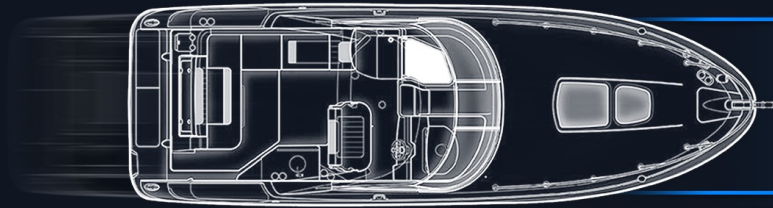
## Path Guidance

Start Autonomous Mode



26 kn

GEAR RPM | RPM GEAR  
F 3700 | 3700 F



Way Point

# Navigation Assistant

NeuBoat

## Collision Avoidance

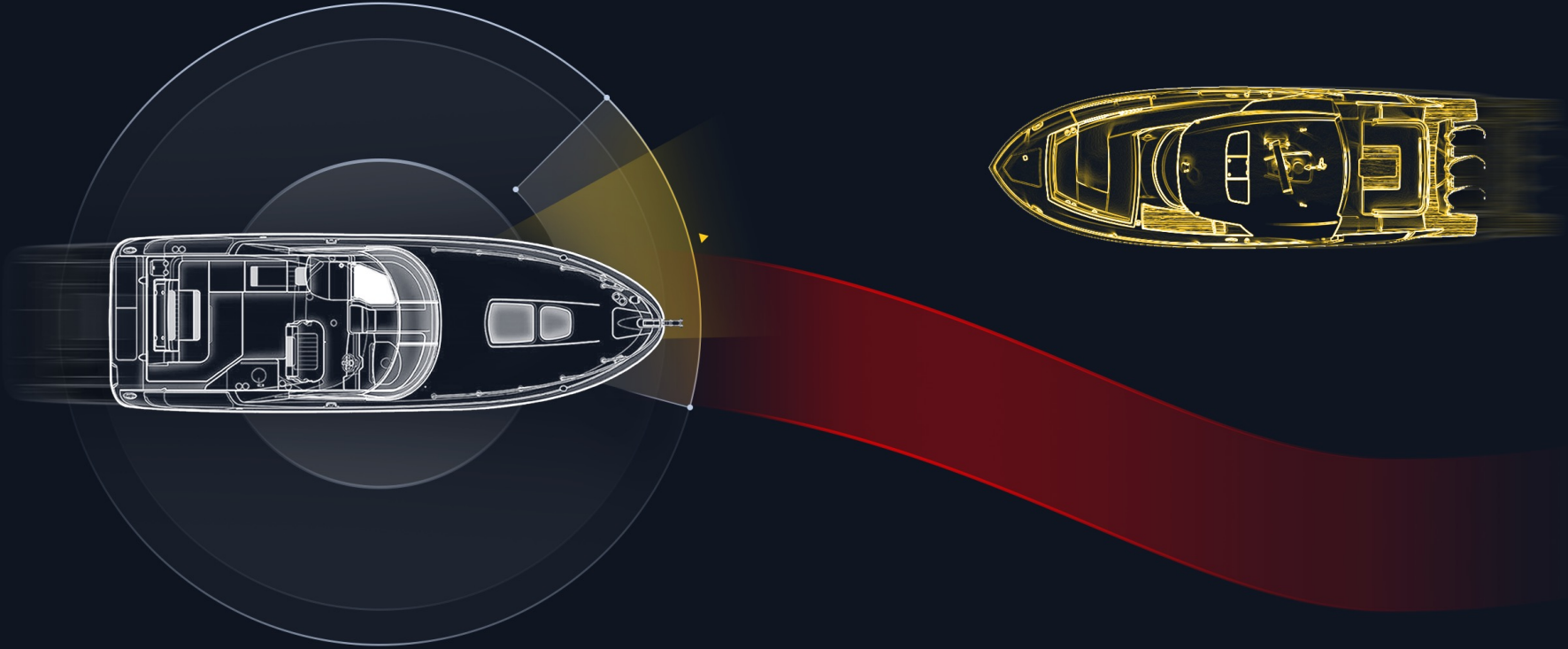
Start Autonomous Mode



26 kn

GEAR	RPM	RPM	GEAR
F	3700	3700	F

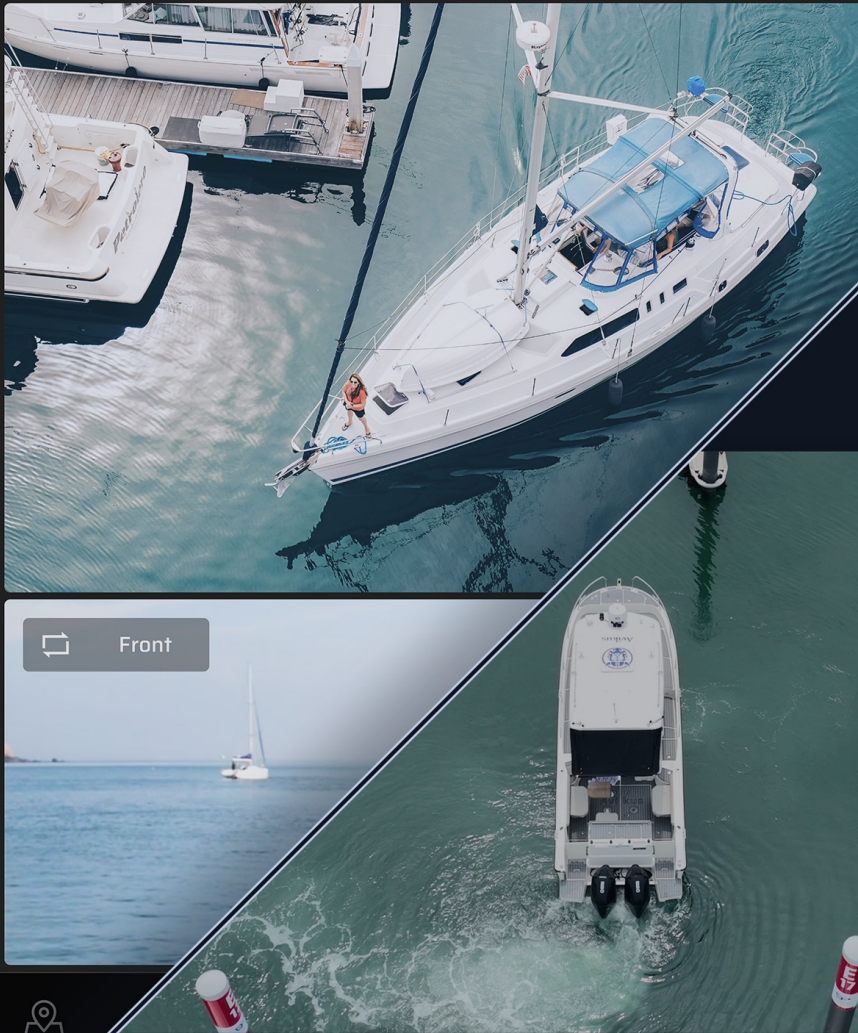
A 3D perspective view of a boat from above, showing sensor cones extending forward and to the sides. A speed indicator below the boat shows '26 kn'. Below this view is a dashboard with four indicators: 'GEAR' (F), 'RPM' (3700), 'RPM' (3700), and 'GEAR' (F). A progress bar is located at the bottom of the dashboard.



# Docking Assistant

NeuBoat

Auto Docking



(Real image)

# Always With You Dock to Dock

'3D surround view' and 'Digital Cluster' on screen will help you to dock the boat safely. NeuBoat also provides convenient autonomous docking.

- Collision Alarm
- 3D Surround View
- Auto Docking and Undocking Control

# Docking Assistant

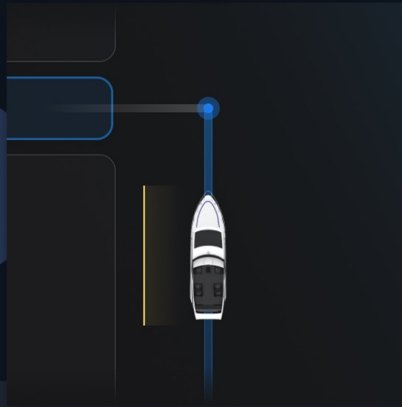
NeuBoat

1



Choose Berth

2



Move to Rotation Point

3



Rotation

4



Approaching

5



Pushing

6

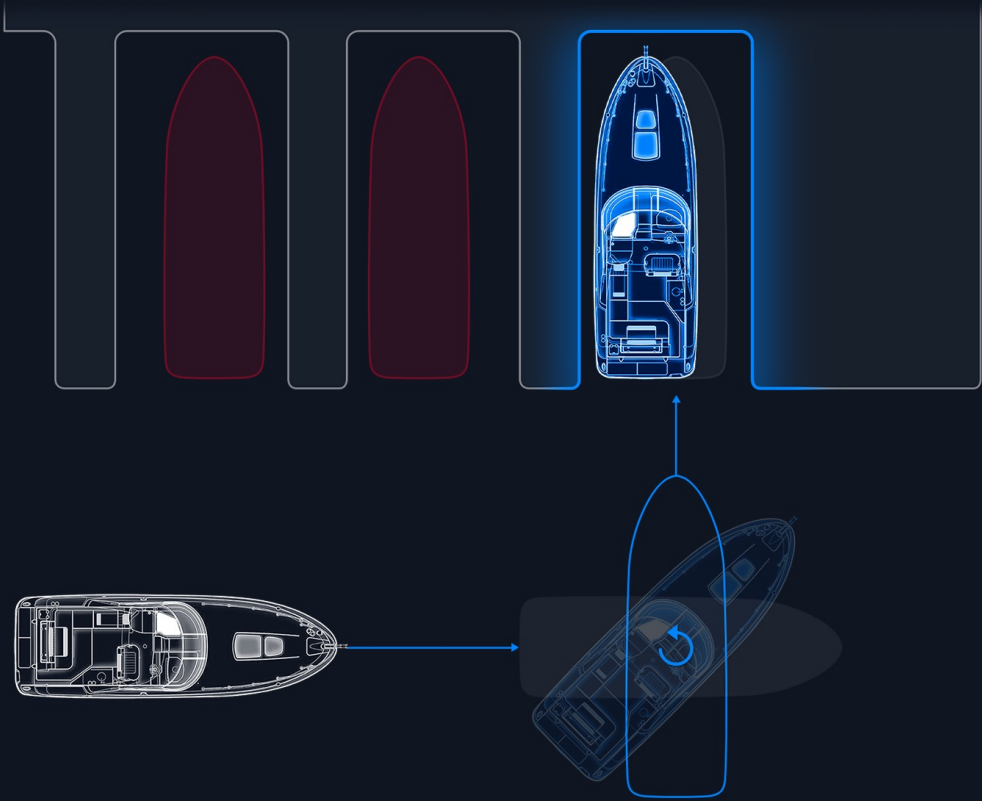


Complete

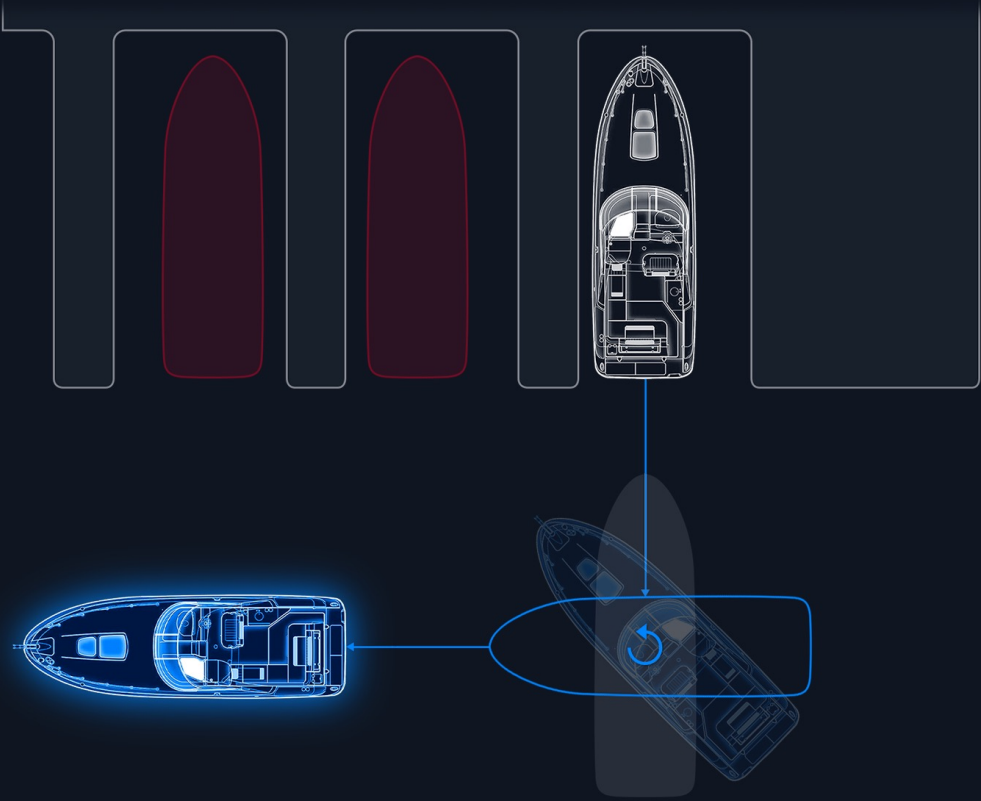
# Docking Assistant

NeuBoat

Auto Docking



Auto Undocking





Mini Map

Start Autonomous Mode

W T No I N S No

3.1 km

5.1 km

GEAR F 3712 RPM SPEED 26 kn

15 m 100% 13:27



Fishing Store

6 Waypoint

Bearing 129° Distance 27.9nm

1st	89.36143° N   139.19006° E
2st	89.36143° N   139.19006° E
3st	89.36143° N   139.19006° E
4st	89.36143° N   139.19006° E
5st	89.36143° N   139.19006° E
6st	89.36143° N   139.19006° E
7st	

Load

26 kn

1.27 m/s 10:47

15 m 100% 13:27



Next 27 km WPT 5 / 63

Route Following

GEAR F RPM 3712 SPEED 26 kn

1.27 m/s 10:47

Route Following

On Course

26 km

RPM 3700 GEAR F

26 km

1.27 m/s 10:47





Auto Docking

E  
STOP

GEAR RPM RPM GEAR  
F 3700 3700 F

Front

F-STBD

||

17 m/s ▲ 10:47



15 m 100% 13:27



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