



**ALAMARIN-JET**  
GO WITH THE FLOW

**SIGMA CONTROLS**

**SIGMA** Technical Specification

## SPECIFICATIONS



- Modular and scalable architecture – From single installation up to 4 jets
  - Multiple control stations
  - Multiple control head and arraignment options
- Flexible BUS architecture - each Jet unit work as an individual BUS node
- Factory made modular cabling system, no custom cables required
- Increased Redundancy – Based on individual drivelines and multiple control law levels
- Easy to approach design
  - Installation is based on plug'n'play modules
  - Intuitive walk through commissioning procedure
  - Simple to use, new High Resolution display with modern UI/UX usability
  - Easy maintenance
- New control Intelligent Dynamics features:
  - Autopilot
  - Virtual Anchor
  - Dynamic Positioning
- Digital engine interface – Direct digital CAN-CAN Throttle control for responsive throttle management without delays
- USV Ready – Comprehensive low-level (CAN) and high-level (IP) interfaces with augmented control algorithms and engine management for fast USV deployment
- Sophisticated diagnostics – Multiple data logging and diagnostic options
- Intelligent self-monitoring system. Temperature, Pressure and Fluid Levels are continuously monitored

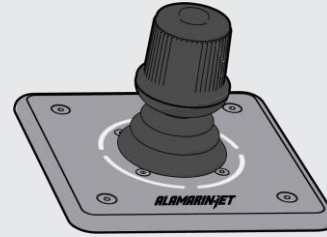
## MAIN COMPONENTS



E-Wheel  
**EWHL**



Twin  
Levers  
**TWL**



3-Axis  
Joystick  
**3XJS**



Computing  
Display Unit  
**CDU**



Helm Control Unit  
**HCU**

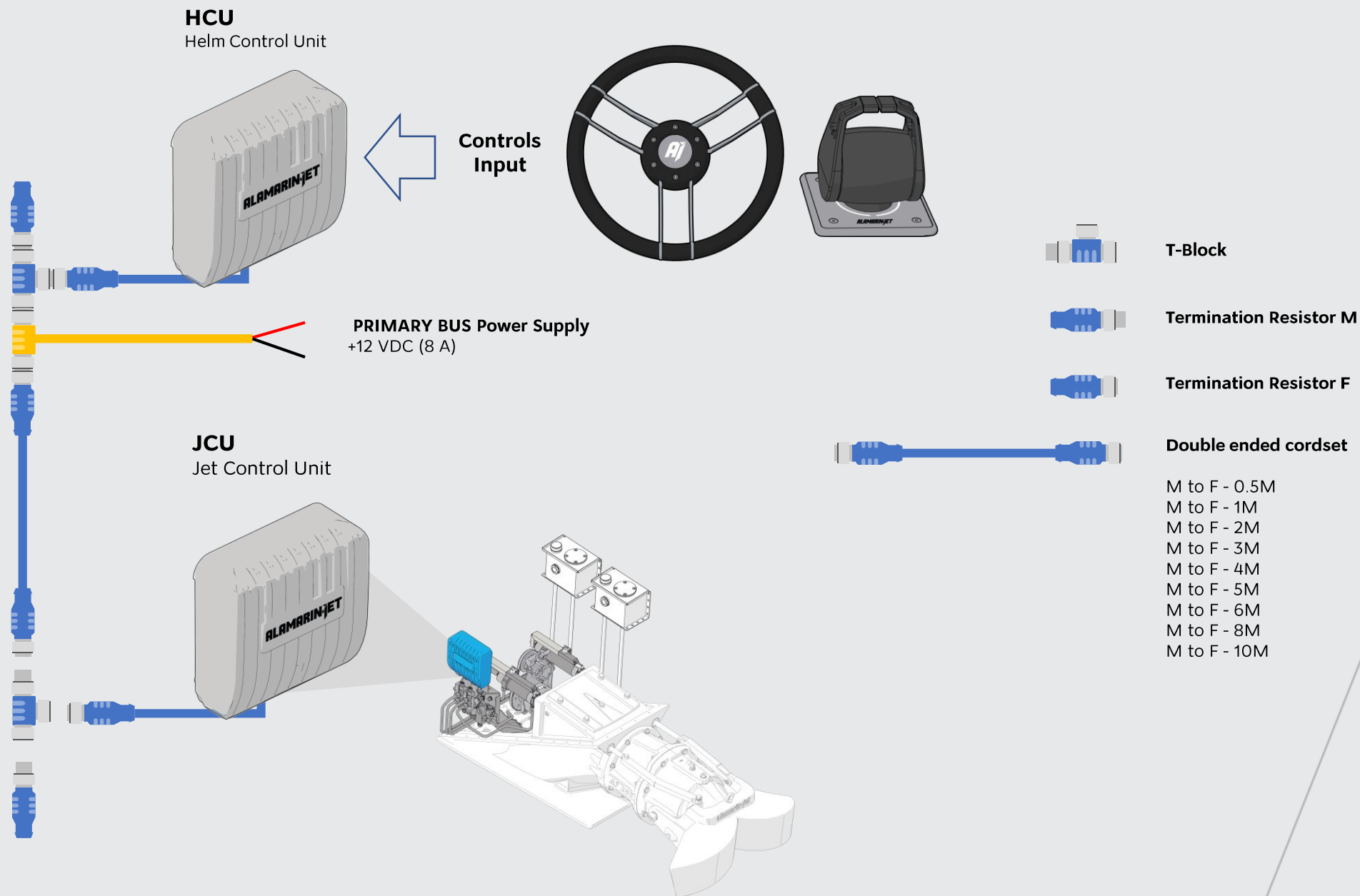


Jet Control Unit  
**JCU**

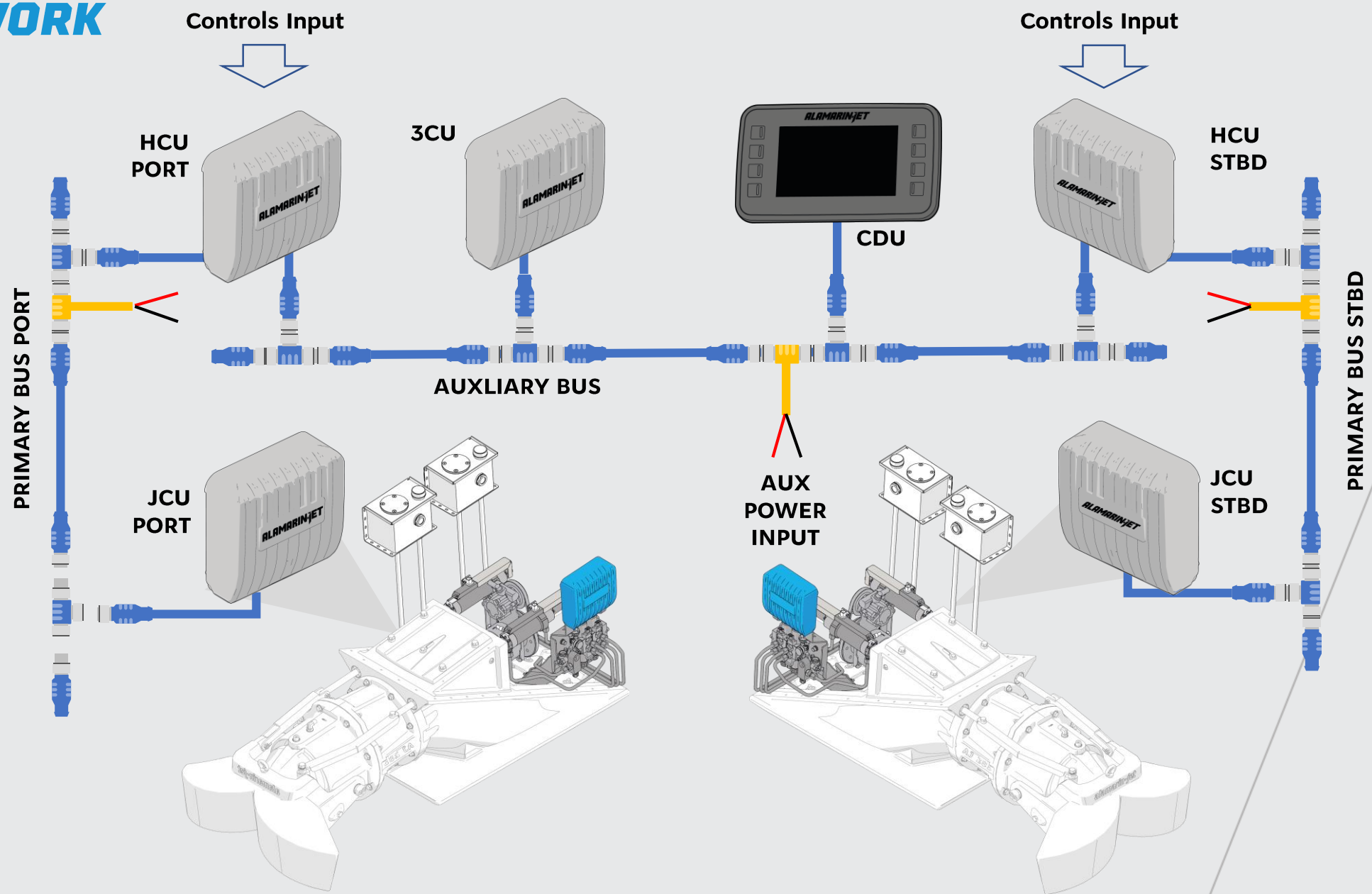


3XJS Control Unit  
**3CU**

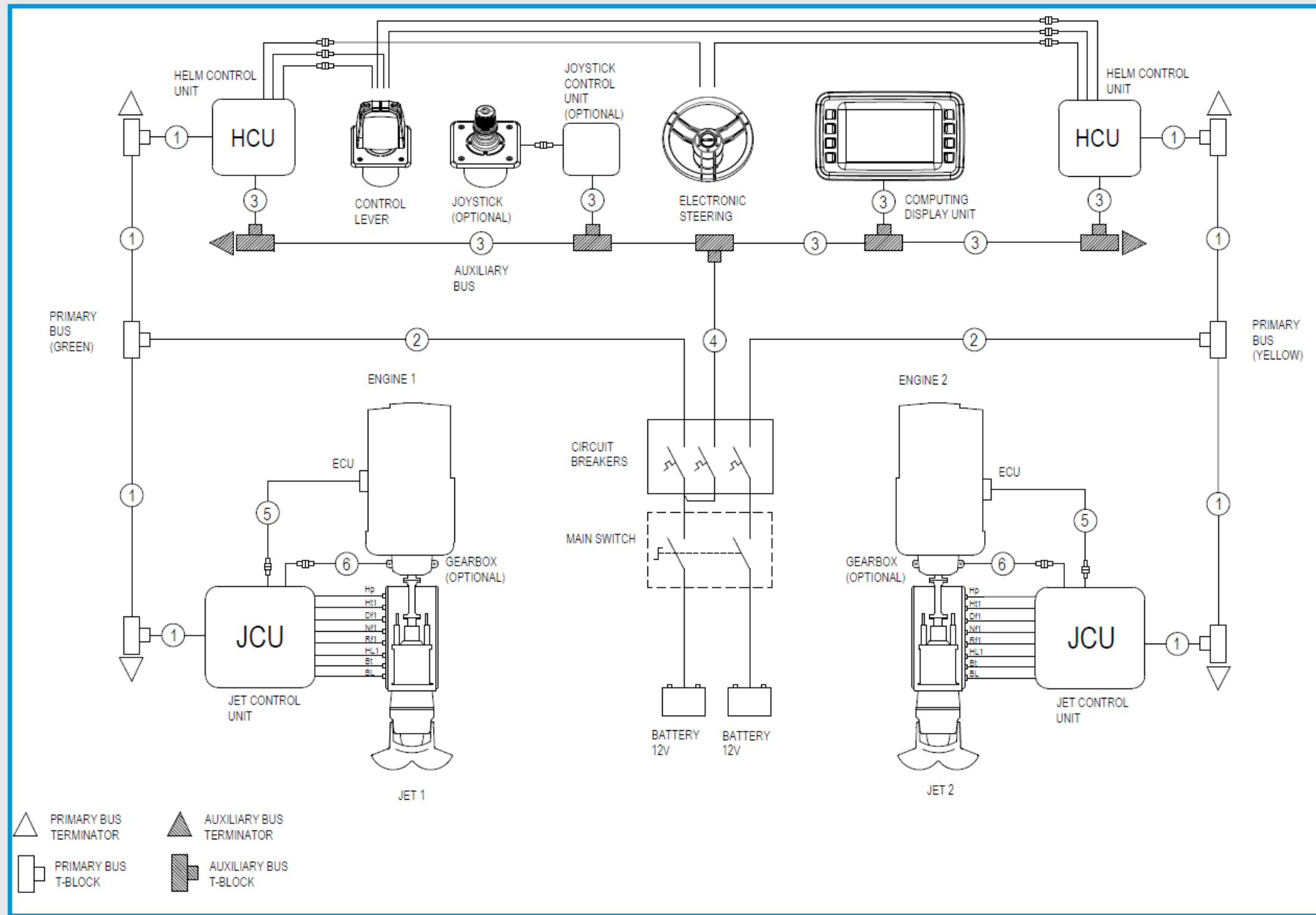
# SIGMA BUS PRINCIPLE



# SIGMA STANDARD TWIN NETWORK

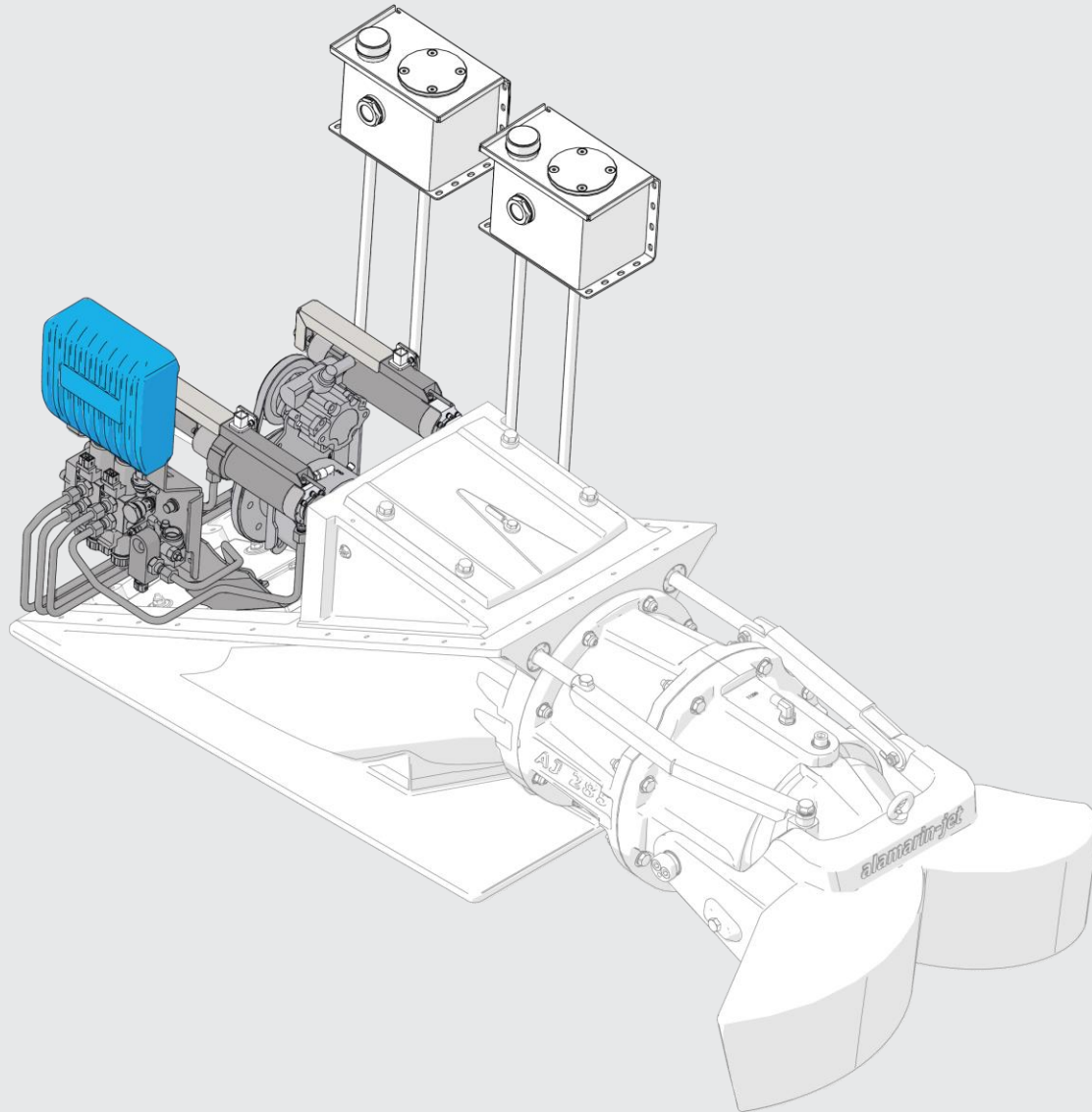


# SAMPLE SYSYEM LAYOUT





# **SIGMA Integrated Hydraulics Package**



## **Integrated Electro-Hydraulic package**

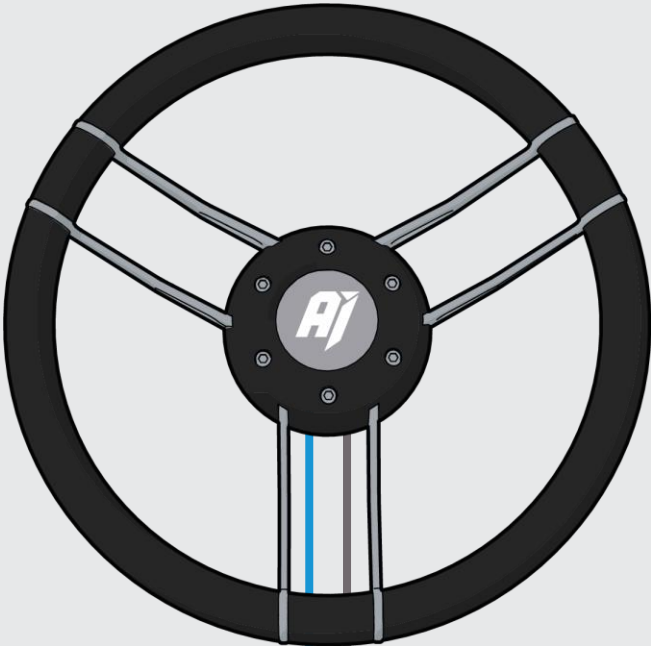
- Each SIGMA Equipped Jet will be factory preassembled and tested
- Each SIGMA –ready jet unit works as a standalone BUS node
- Power supply and controls through single super robust cabling system
- Easy to install and service
- Distributed system increases redundancy
- Hydraulics can be manipulated manually in the case of emergency

**SIGMA Introduction**  
**E-Wheel**



**Absolute Position  
Sensor 1 turn**

**Dual Output  
Hall Effect sensor**



**Independent  
Outputs**

**HCU  
PORT**



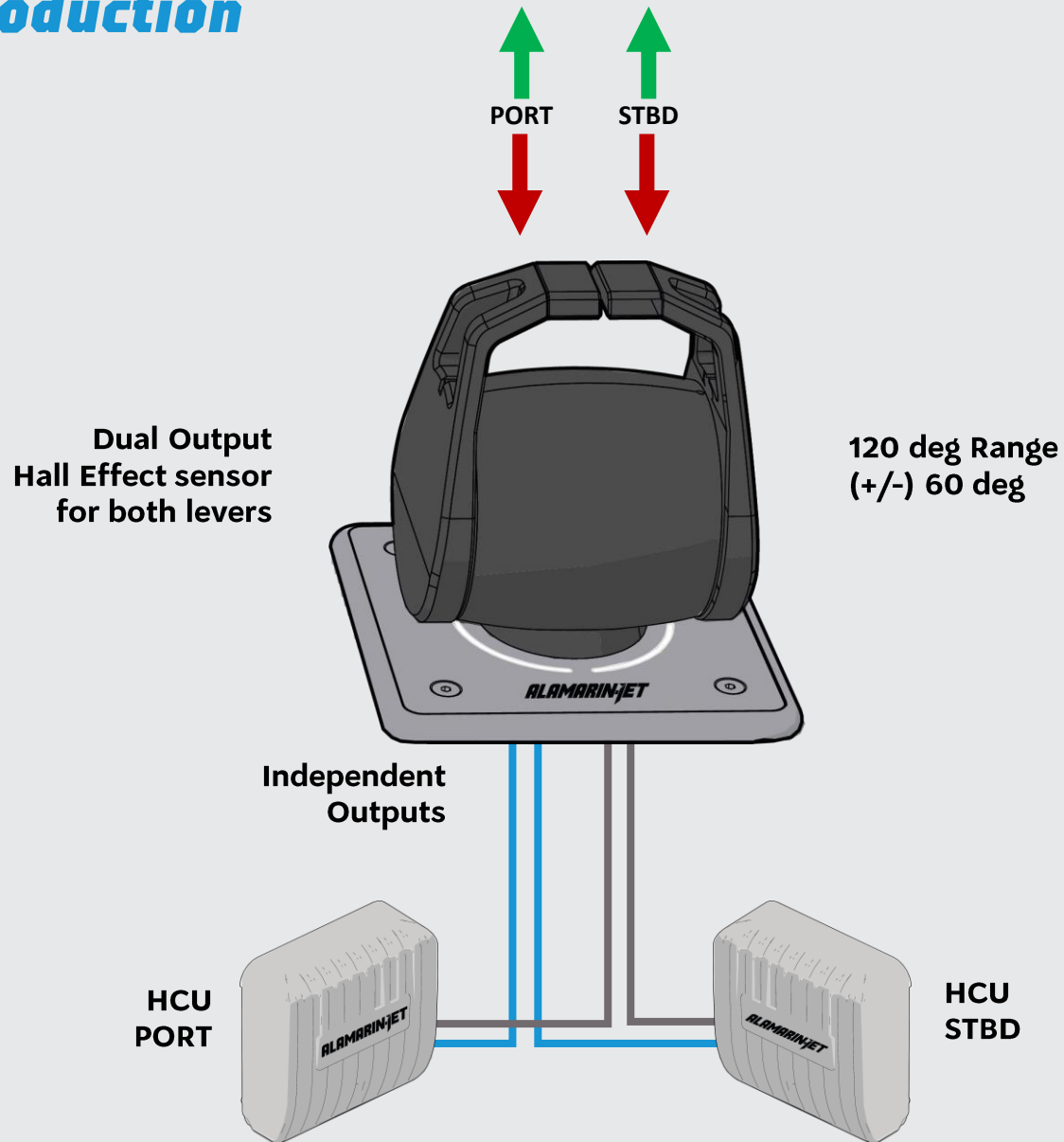
**HCU  
STBD**





# **SIGMA Introduction**

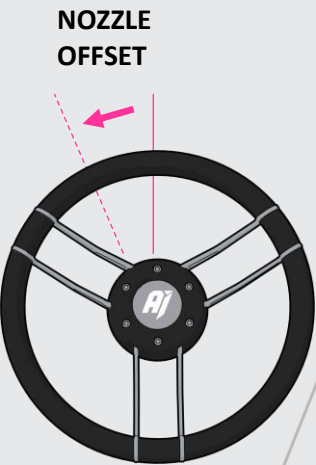
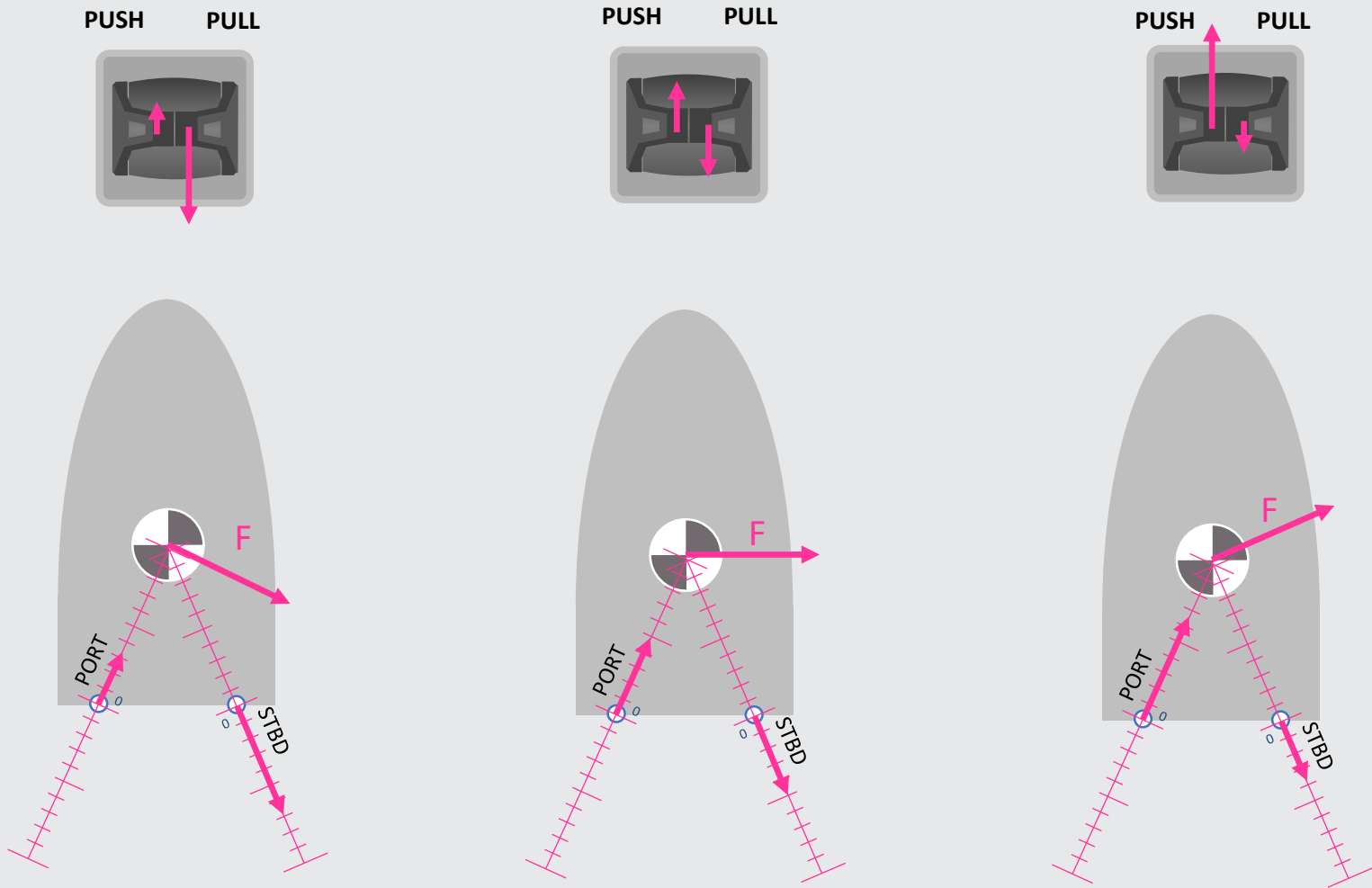
## **Twin Lever**



# SIGMA Introduction

## Twin Lever Sideways manoeuvring

(without 3-axis joystick)



# SIGMA Introduction

## CDU – Computing Display Unit

- Robust display with 8 buttons
  - Change display mode
  - Adjust brightness
  - Increase idle
  - Engage/disengage gears
  - Activate Intelligent Dynamics Functions
- Light sensor automatically or manually adjust brightness
- 3 display modes
  - PROPULSION
    - Shaft Speed
    - Deflector Position
    - Steering Nozzle Position
  - NAVIGATION
    - SOG
    - Heading
    - Intelligent Dynamics Functions
  - DIAGNOSTICS
    - Hydraulic
    - Electrical



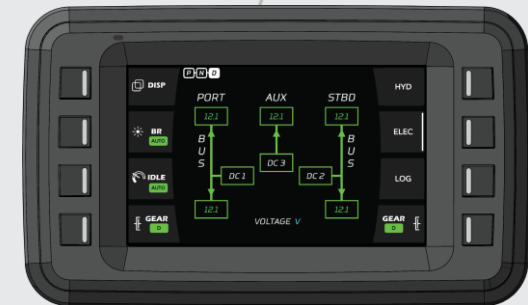
**PROPULSION**



**NAVIGATION**



**DIAGNOSTICS  
HYDRAULIC**



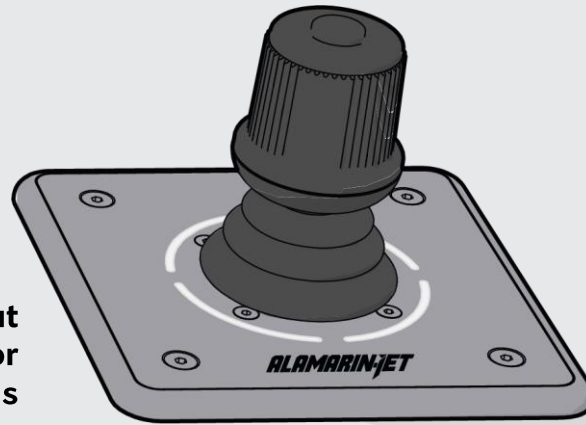
**DIAGNOSTICS  
ELECTRICAL**



# ***SIGMA Introduction***

## ***3XJS - 3-axis Joystick***

- Single handed, intuitive docking
- Up to 3 additional stations
- IP68
- Single CAN cable connection



**Dual Output  
Hall Effect sensor  
for all axis**

**3CU**



**AUX BUS**



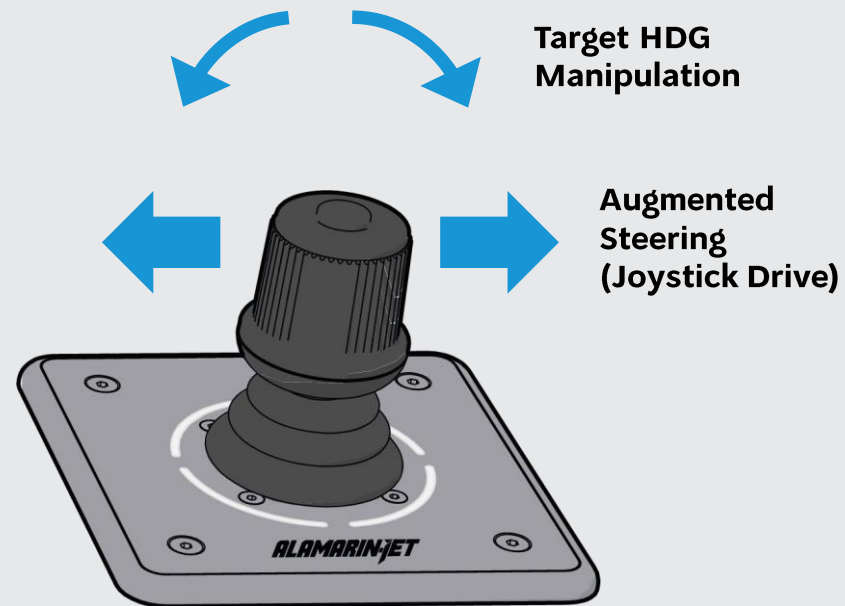
# INTELLIGENT DYNAMICS

## HDG – Intelligent Heading Control

- Augmented Joystick Driving
- Easy to adjust locked heading on fly
- Reduced user load
- Easy to use



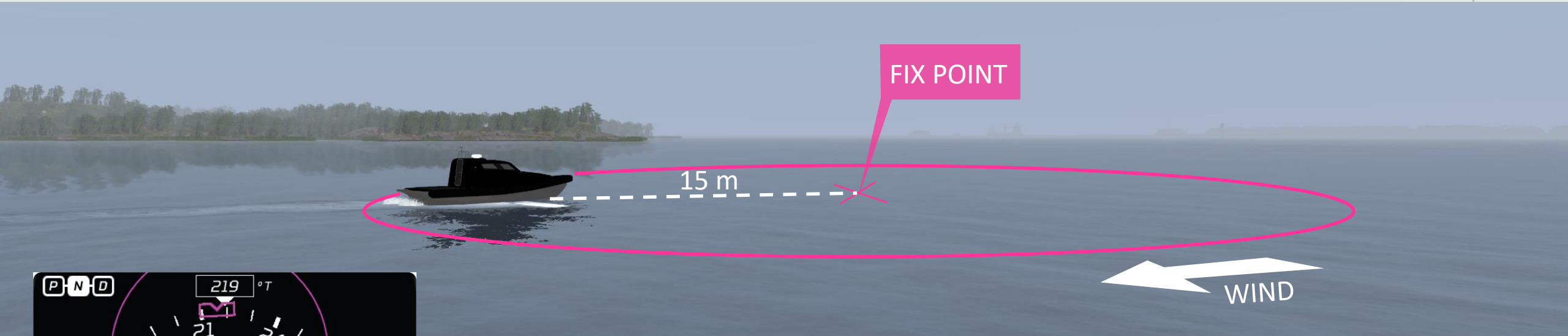
### 3XJS Functions in Intelligent Dynamics Mode



Target  
HDG

# INTELLIGENT DYNAMICS

## ANC – Intelligent Vessel Anchor



### Virtual Anchoring

- Minimum RPMs are needed
- Fuel efficient
- Bow against the wind
- Convenient for the crew
- Ideal for ROV deployment
- Works also on single jet configuration

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